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WORKING TOWARD A PEDAGOGY OF AWARENESS: MULTIMODALITY AND
UNIVERSAL DESIGN FOR LEARNING IN THE FIRST-YEAR COMPOSITION
CLASSROOM

By

VIRGINIA M. SCHMINKE-YAUSSY

THESIS

Submitted to
Northern Michigan University
In partial fulfillment of the requirements
For the degree of

MASTER OF ARTS

Graduate Studies Office

2012

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ABSTRACT

WORKING TOWARD A PEDAGOGY OF AWARENESS: MULTIMODALITY AND UNIVERSAL DESIGN FOR LEARNING IN THE FIRST-YEAR COMPOSITION CLASSROOM

By

Virginia M. Schminke-Yaussy

This thesis describes my study which reviews surveys, interviews, and student work in the EN 211D: Technical and Report Writing course I taught in the Fall 2010 semester. The questions to be answered were: 1). What modalities students identify as their main learning preference? 2). If students know and understand their learning preferences, then will they use them in their own work and in the consideration of others? 3.) Will the application of modalities foster student awareness of the self, others, and writing and/or student motivation to compose in the first-year composition classroom? I examined multimodality paired with universal design for learning to create an accessible pedagogy for a diverse student-base and create student-awareness of self, others, and their writing in a Northern Michigan University's composition sequence technical writing course. I structured my course to include assignments and units that focused on principles of multimodality and universal design for learning, such as modal round discussions. My pedagogical goal was to investigate and develop strategies to help motivate students and work toward a human-centered technical writing and communication course.

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2012

DEDICATION

This thesis is dedicated to my loving husband, Nathan, who offered constant love and support; to all of my family for their love; to my friends for the many moments of insight; and to my cat Alfred, for sitting next to me during my writing process when I needed him.

ACKNOWLEDGMENTS

I would like to thank Dr. Kia Jane Richmond for her insight and guidance as thesis director, mentor, and teacher. Every moment spent in your office offered discovery and a place for listening. I appreciate every discussion – including the cat stories.

I wish to thank Dr. Liz Monske for her support, questions, and intuition. I am in awe of your knowledge and I aspire to your level of tenacity and patience.

Also, I want to thank Professor Laura Soldner for her compassion and encouragement.

This thesis uses the guidelines provided by the publication manual of the *American Psychological Association* and the Department of English.

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INTRODUCTION

Imagine yourself in kindergarten again. Your teacher points to a word on the board, says it, and then asks the class for real examples of the color. You excitedly point to a fake orange on the table near your teacher. Fast forward to early grade school and you are reviewing photosynthesis for science class. You first read a little from your textbook about the scientific process, and then you and your classmates trek outside to visit the school's garden, where your teacher explains the process again: pointing at different plants and the available water and light sources. In middle school, your class is working on a unit about William Shakespeare's plays. As a class, you read a popular play out loud – let us say, *Macbeth* – in full, in class. Then, you prepare a scene from that play with several classmates. One of your classmates wants to make videos when she's older, so you make a video recording of your scene to play for the class.

Eventually, you reach high school. In high school, the focus is to pass state standardized tests and to be prepared for the world beyond – most likely that world is college. Your teachers ask you to sit and listen and respond to lectures. For the most part, your class projects revolve around essays. These essays most certainly do not contain pictures to help illustrate concepts because they are not encouraged. In fact, most of your writing and composing is entirely word-oriented. Unless you are in debate club, you do not talk when you explore new concepts. You either listen to lectures or read from informative texts. The only learning that may seem familiar takes place in your biology and chemistry classes where you continue to experience hands-on experiments. You

continue to wonder why the learning has changed, and your teacher tells you, “to prepare you for the college learning environment.”

In college, you find yourself in a completely new learning world. Your friend from middle school who loved video and film-making complains that she really did not have practice for it in high school. Here, she is expected to express learned concepts through her videos and through interpretive written narratives. You find that your science classes are relatively the same: you sit through a lecture and apply the learned content through a physical experiment. However, what you are most disappointed with is your English composition course. Here, gone are the clunky five-paragraph, “footstool” essays where you present an idea with three components, explain each in a paragraph, and finally restate the idea. Instead, you are required to have a writing level that goes beyond simplistic paragraphs and regurgitation. However, you are not quite sure how to go about it. You wish you could go back in time, where you could turn in papers with pictures. Finally, one day you are perusing the internet, looking for potential employers. It hits you. In the real world, writing has pictures and videos and interactivity. The website you are looking at has the writing you would like to do in college. This type of writing, or composing, is motivating. However, this writing would come from how and what you learned when you were younger. You certainly do not remember writing anything similar in high school, and you feel yourself wanting to go that way toward how you want to write in college. Can it be true? Could learning to write and analyze be possible through other methods than lecture and the write-and-drill idea?

If students are encouraged to use both in thinking and in application different learning modes, will they be more motivated to compose for themselves and for others

(audience)? The key question this thesis analyzed is described by the scenario above. If college instructors teach using the principles of universal design, meaning the incorporation of assignments requiring different modes to produce and within the eventual product, how will the learning and writing be perceived? In short, should teaching and composing through and with different modes help students write more effectively and instructors teach with more meaning and direction in the composition classroom?

CHAPTER ONE: LITERATURE REVIEW AND OVERVIEW OF TERMS

Literature Review

As noted in the scenario above, composition using multimodality drops off significantly in the college classroom. This is not to say that college multimodal composition does not exist, but that modalities as learning tools occur far more common in adolescent education. For example, the text *Adolescents and Digital Literacies: Learning Alongside our Students* by Kajder (2010) is fairly recent and published by the National Council of English (NCTE) includes an entire chapter on reading and writing multimodal texts. Different modalities are encouraged, including collaboration and the use of new media, such as podcasts. All of this is in connection with NCTE's policy research brief, *Adolescent Literacy* (2007), about bolstering adolescent literacy.

Other writings focused on multimodality look at the many facets modalities take in considered for student learning. Carrington & Robinson (2009) discuss modes in relation to digital technologies found in the classroom, such as computer programs used by students and visual literacy in *Digital literacies: social learning practices and classroom practices*. Kress (2000), Kress & Jewitt (2003), and Frailberg (2010) consider how technology influences adolescent learning along with the ideas of multiculturalism. Multimodal instruction becomes more about the language and extends to curriculum and cognitive processes. Leland & Harste (1994) discuss multimodal instruction as presenting multiple ways of knowing. Educators also place multimodal emphasis in specific instructional areas, such as argument (Johnson & Moneysmith, 2005). These writings

follow and inspire many more readings discussing the benefits of multimodal instruction and consideration in the classroom as a way to increasing adolescent literacy.

However, with this consistent focus in adolescent literacy, multimodality is not absent from college composition. Selfe's text, *Multimodal Composition* (2007), attempts to fill the gaps of new media and technologies to expand our view of literacy at the college level. The text is an attempt to work multimodality into a pedagogy instead of a buzzword. In the first chapter, Selfe and Takayoshi (2007) outline the argument for teaching modalities in the college classroom. The first claim: students need to be skilled in composing in multimodalities because their workplaces, schools, and civic life rely on digital communication networks as opposed to the standard printed word. The second claim is that if composition instruction is to remain relevant, the definition of composition and text needs to grow and reflect real world literacies. Third, creating compositions that include images and video, although demanding and time consuming, are ultimately more engaging to the writer. As Selfe and Takayoshi (2007) note, "Multimodal composition may bring the often neglected third appeal—pathos—back into composition classes (which often emphasize logos and ethos while devaluing pathos as an ethical or intellectual strategy for appealing to an audience)." Fourth, composition that uses the audio and video require the same rhetorical principles as traditional communication methods. Finally, teaching multimodal composition allows for progressive education and ultimately "opportunities to think and compose multimodally can help us develop an increasingly complex and accurate understanding of writing composition instruction and text." After *Multimodal Composition*, one can find many

scholarly articles that talk about digital literacies, specific modes, such as audio or visual components in composition.

What needs to be reviewed is multimodality in specific fields of composition. The field of technical writing developed from a positivist view of science and rhetoric, and the new goal is to create a human-centered teaching of technical writing. Miller notes in the article “A Humanistic Rationale for Technical Writing” (1979) that the positivist or instrumental model of technical writing is skills based and the rhetoric becomes “irrelevant.” However, with the human centered view, technical writing becomes a field concerned with audience awareness and usability. Basically, the goal of teaching technical writing is for students to communicate direct audience-considered documents. In order for technical writing to be humanistic, it must consider the audience and how they use the document or communication method. In Mirel’s article, “Advancing a Vision of Usability” (2002), it is expressed that writing in the technical writing field and the documents needed to be composed show a need for “designing for usefulness” (p. 218). Mirel writes about programming software and other technical writing processes could benefit from usability leaders who focus on creating and justifying design useful communication as well as analyzing user needs for complex ideas.

To pedagogically advance technical writing as a human centered area, educators to need to apply these principals of usability and the movement of multimodality to college composition courses. The classroom study by Walters in the article “Toward and Accessible Pedagogy: Dis/ability, Multimodality, and Universal Design in the Technical Communication Classroom” (2010), does just that. Her article outlines a study where she uses the principals of universal design for learning and multimodality within the technical

writing classroom to create a pedagogy in which students become aware of their communication methods to both themselves and to their audience. Her classroom experience focused on a higher level of student writers, what needs to be examined are the principles applied to a first-year composition classroom.

Definition of Terms

Before leaving this introductory chapter, I must clarify and define some of the terms I will be using throughout this thesis. In any investigation, it is important to consider the use of terms by the researcher. Interpretations could differ, which would influence the context of this particular study. The basis I have for the terms “multimodality” and “universal design” are constructed by my own personal readings and the meanings implied in this study’s jumping off point, “Toward An Accessible Pedagogy: Dis/ability, Multimodality, and Universal Design in the Technical Communication Classroom,” by Walters, which was published in *Technical Communication Quarterly* (19.4, 2010)

What is a Mode?

For the purposes of this thesis, “mode” refers to a “way of doing” (Fleming, 2011, “VARK”) This way of doing is in reference to a learning preference. Preferred modes are not static. They can change dependent upon the situation or circumstance. It is important to differentiate this from learning styles and cognitive styles. The preferred modes do not reflect a learning or cognitive disposition; this is different from theories of intelligence, such as Gardner’s theory of *Multiple Intelligences* (2006). The learning preferences are put into application by modes (way of doing) and can change. Learners may have a preference, but this preference may change. Preferences may even be chosen on purpose,

given the situation or circumstance. A learner can reject or refuse to use a particular mode in favor of another. They simply indicate a learner's way of approaching a task or the input/output of information. For example, a person with a learning preference for the visual mode likes charts and graphs to show data for a scientific study they performed. This person might not process information well in auditory form, so explaining the data verbally would be confusing. However, this person could also adapt to different modes, such as adapting to a kinesthetic mode due to work in a laboratory. A person's modal choices can change, morph, or develop based on need and situation. Learning modes do not reflect actual knowledge about a subject, just the processing. In other words, preferred learning modes do not reflect nor show intelligence.

What is Multimodality?

A quick deconstruction of the term "multimodality" would expose it as meaning "many" (multi-) "modes." In other words, the basic definition indicates that there is more than one way to do something. For the purposes of this study, "multimodality" is defined as many ways of learning and applying learning.

In Walters' article, "Toward An Accessible Pedagogy: Dis/ability, Multimodality, and Universal Design in the Technical Communication Classroom," multimodality is defined in several ways. She cites Cope & Kalantzis' (2000) "typical" definition, wherein multimodality refers to the ways "in which written-linguistic modes of meaning are part and parcel of visual, audio, and spatial patterns of meaning." For Walters (2010), multimodality encompasses the learning modes of "linguistic, visual, audio, gestural, and spatial meanings" as well as combinations of the five (p. 437). Therefore, multimodal texts could include combinations of audio and visual, or visual and spatial components.

What is VARK?

For the purposes of my study, I chose to simplify the modes my students (those in a College Composition (Technical and Report Writing) class at a Midwestern liberal arts university) would use to track their learning preferences. I used Fleming's VARK study and online questionnaire (2011) as the basis for my students' preferred modes. Fleming's study does not define the modes as learning styles, which would indicate multiple dimensions and be more static; VARK's modes are learning preferences, indicating the preference for the output and input of information. "VARK" is an acronym that stands for "Visual, Aural, Read/write, and Kinesthetic" modes. Using VARK, a student can test for which mode(s) they have a preference for using. Students may show a clear singular, dominant preference, multiple or combination preferences, or be multimodal (indicating that they employ three or more modes easily). The VARK questionnaire and guides emphasize that learners are different, not dumb (Fleming, 2011, "FAQ"). The purpose of discovering preferred modes is to encourage the learning of different strategies for learning information.

Multimodality as Defined for This Study

In my study, I ultimately defined multimodality as the use of many ways of doing, clarifying "doing" as a mode. I defined modes through Fleming's definition, citing that modes could be visual, aural, reading/writing, and kinesthetic/hands-on, or a combination. I asked students to take the VARK questionnaire to determine their learning preference(s). To review this questionnaire, please see Appendix A.

Because these modes are not static, I encouraged students to re-take the questionnaire on their own time in different situations to identify any possible changes that could occur with practice working with modalities or in different learning situations. I asked students to consider modes when composing writing for themselves and for clients/audience. My goal was to provide students with modes that they could identify and apply to their composition. As noted by Selfe and Takayoshi (2007): “the more channels students (and writers generally) have to select from when composing and exchanging meaning, the more resources they have at their disposal for being successful communicators” (p. 3).

What is Universal Design for Learning?

The typical assumption for the term “universal design” is concerned with architecture. In this manner, universal design refers to designing the physical environment for those with disabilities, eventually designing for all users. “Universal design for learning” is the pedagogical application of universal design principles. The National Center on Universal Design for Learning’s, CAST, the Center for Applied and Special Technology (2012), defines universal design for learning as “a set of principles for curriculum development that give all individuals equal opportunities to learn.” The goal is the creation of educational materials (lesson plans, assignments, methods, assessments, etc.) that is not “one-size-fits-all,” but flexible and inclusive (National Center on Universal Design for Learning, 2012, “CAST: About UDL”).

For this study, I defined universal design for learning as presented by CAST. Overall, universal design for learning is “a set of principles . . . that give all individuals equal opportunities to learn” (National Center on Universal Design for Learning, 2012,

“CAST: About UDL”). I also provided my students with the three principles as identified by CAST:

1. Provide Multiple Means of Representation: Present information and content in different ways

Within these principles, “representation” refers to the display of information, such as language, expressions, or symbols and how they can be comprehended, such as through patterns or alternative presentations. For example, audio information could be represented by both the audio file and speech-to-text captions.

2. Provide Multiple Means of Action and Expression: Differentiate the ways that students can express what they know

“Action” is defined as physical action, such as the act of turning pages or maneuvering a mouse on a webpage. “Expression” means communication and fluencies, such as expressing information using multiple media sources or scaffolding information to build fluency.

3. Provide Multiple Means of Engagement: Stimulate interest and motivation for learning

The term “engagement” refers to the interest level, or methods such as offering goals or motivating the individual to communicate and learn.

I asked my students to consider universal design for learning in how they composed for themselves and for others (clients/audience). Students considered opportunities to learn and approaches for communicating information in a way that reached the most people

possible. I presented students with the idea of multimodality as a tool for approaching the principles of universal design for learning in their writing projects.

Conclusion

This study, then, looks at how students could use the principles of multimodality and universal design for learning in their writing projects and how this could affect their motivation and the accessibility of the material (technical writing). I asked students to identify and use their preferred modes when composing, and I asked them to consider the principles of universal design for learning as well. Participants were students from my Fall 2011 semester EN 211D: Technical and Report Writing course, a first-year composition sequence course, at Northern Michigan University in Marquette, Michigan.

In chapter two I will define the need for the study. I will also explain how this study has been adapted from Shannon Walters' work on multimodality and universal design in the technical writing classroom. My reasoning for using the type of survey and interview I employed will also be explored. Also, I will describe how I collected and analyzed the data I received.

Chapter three is meant to describe my methods and background. I will review the setting for my study, Northern Michigan University in Marquette, Michigan, and provide information about its first-year composition sequence. I will also discuss my syllabus and course assignments and how they relate to my study as well as the empirical methods of survey and interview.

Chapter four will discuss my anticipated and actual results. I will compare my hypothesized with the actual outcomes. Also, I will offer specific examples of student work and responses.

The final chapter will review research and pedagogical implications, as well as limitations and a call for more research.

CHAPTER TWO: DEVELOPMENT OF THE STUDY

This chapter will identify the need in current research that my study attempts to fill. Furthermore, I will describe in detail the study that was the impetus for my research agenda. This chapter also will describe the reasoning behind the use of survey and interview methods for empirical research, as well as how data was collected and analyzed.

Need In Scholarship

Educators benefit from pedagogical examinations that take place in actual classrooms with students. Case studies allow for an educator to examine a situation closely, also allowing for replication in other educational situations. To theorize about multimodality and universal design for motivation will only yield supposed ideas. Therefore, to further investigations into the field of technical writing as a human-centered composition practice, one must make practical applications.

It is for these reasons that I decided I would conduct a case study using a sample class. I wanted to pedagogically facilitate a situation in which the course syllabus and empirical research, such as surveys and interviews, examined the impact of a multimodal and universal design for learning in a first-year composition classroom with a technical writing focus.

Inspiration

As noted in chapter one, I was inspired by Shannon Walters' article, "Toward An Accessible Pedagogy: Dis/ability, Multimodality, and Universal Design in the Technical Communication Classroom," from *Technical Communication Quarterly* (2010). In

Walters' (2010) article, she looks at how multimodality paired with the principles of universal design and disability studies within the technical communication classroom creates an accessible pedagogy and student-awareness of self, others, and writing.

Walters' (2010) study primarily used focused discussion and readings on disability as a backdrop to her technical communication course. Her students were instructed on the principles of universal design, both for physical spaces and learning. They also had instruction on disability studies topics, such as composing for those with visual impairments. Her students were encouraged to take multimodal approaches toward classroom projects, wherein most of their audience had different abilities. As a result, Walters' (2010) students became more aware of their writing process in terms of providing clear and understandable information for their audience.

It is Walters' (2010) final thought that inspired this study: "This contribution [the integration of multimodality and universal design] includes the ongoing project of making technology, the built environment, and social spaces more accessible to the widest range of people—disabled, nondisabled, temporarily able bodied, and everyone in between" (p.451). It is a common wish in composition courses that students would "find themselves" in their writing and also understand and write clearly for their audience. As Walters' (2010) study indicated to me, coupling multimodality and universal design might create self-awareness and the awareness of others in the writing process. I also posited that this awareness might help students want to compose more – simply put, if they understand what is going on in their own writing process, they would feel more at ease, or motivated, to write.

Walters' (2010) students took the class as a 400-level advanced technical writing and communication course. Therefore, her students were likely experienced college communicators. My study looks at the similar pedagogical principles of multimodality and universal design for learning when applied to a first-year composition course. The students in my course intend to complete a requirement for their liberal studies, so they come from a different perspective than Walter's students.

Unlike Walters, I wanted my students to focus on a more general audience (an audience that includes all abilities). I also had limitations regarding subject matter and course level, so I decided that my student would not have a focal point regarding disability studies. However, I knew that disability studies would appear as an "extra" consideration that would appear in general discussions about audience abilities and the principles of universal design for learning. Therefore, the focus of my study will be on the use of multimodality combined with universal design for learning's principles in Northern Michigan University's composition sequence's technical communication course, EN 211D: Technical and Report Writing. I did not want to use disability literature or readings as a focus or theme; rather my course will not be themed. I based projects on principles of universal design and multimodality. Nevertheless, I did plan to utilize a few of her teaching methodologies, such as reviewing readings for different present modes and reviewing websites for design principles.

Development of Study

Due to the gap in research for multimodal instruction as well as the methods described in the above section, I opted to create a research study so I could have empirical data to look at in terms of student motivation and learning preference.

The purpose of this study was to discover and examine the following:

- 1.) What modalities students identify as their main learning preference?
- 2.) If students know and understand their learning preferences, then will they use them in their own work and in the consideration of others?
- 3.) Will the application of modalities foster student awareness of the self, others, and writing and/or student motivation to compose in the first-year composition classroom?

Because I knew that I would be reviewing student perceptions and work, I had to complete Northern Michigan University's Internal Review Board application for review of research involving human subjects. My project, #HS11-424 was approved. As dictated in the report, the study was to be conducted August 1, 2011 to December 31, 2011. My scope was limited to one section of EN 211D: Technical and Report Writing, which is the second course in Northern Michigan University's first-year composition sequence. I needed fifteen to twenty-five participants to offer a full study. To review the Internal Review Board Application in full, please see Appendix B.

All students in my EN 211D-01 course were invited to participate. The student cap for a EN 211-level course at Northern Michigan University is twenty-five. Students were asked to complete a signed permission form. Participants answered survey questions regarding course work, teaching and learning methods, and their writing. Questions regarding gender, race, or major were not asked as they do not pertain to the study. Deception was not planned. The anticipated risks associated with this study include: participants revealing information they prefer to be kept confidential; participants learning something about

themselves they might prefer not to know; and/or participants learning something about others that they might prefer not to know.

To conduct my study, I knew that I would need to pre-plan my instruction to include elements of multimodality and the principles of universal design for learning. Doing so would set the tone for the course work, as well as give participants a background to refer to. I developed my syllabus to reflect the principles of universal design for learning by using multimodality, and I focused technical writing assignments to encourage multiple representations, action, expression, and engagement in the documents. To review the course syllabus, please see Appendix C.

I tracked my teaching through teaching notes, and I kept a teaching journal that reflected my impressions of student comments. To prepare for using student work, I saved student-composed documents in a separate folder, keeping commented and uncommented versions of their documents. These reflections and comments will be discussed in chapter four as part of my overall findings. In order to minimize any potential associated risks, I used pseudonyms in referring to students and student work.

I chose to give three surveys and one interview to empirically measure student motivation. Due to the need for anonymity as dictated by the IRB application, I did not choose to survey or interview in person. All surveys were either taken in private (as with the VARK survey) or in the classroom with my thesis director proctoring and collecting the data. All survey results were kept in closed folders in Dr. Kia Jane Richmond's office until after the semester concluded and final course grades were submitted.

The VARK survey was taken by the student on their own time. Fleming's (2009) survey focused on situations, such as "You have finished a competition or test and would like

some feedback. You would like to have feedback?” (“Questionnaire”). The four responses corresponded to the four modes (visual, aural, read/write, kinesthetic), and students could choose one or more. The results of the survey showed the hierarchy of the learning preference with students who did not possess a singular strong mode as multimodal. I requested a print out of the survey results from each student as I used the results to determine direction and advice for student conferences. A copy of the VARK survey is in Appendix A.

The other two surveys, of which I created, consisted of twenty questions that asked participants to consider modalities, writing for themselves, writing for others (audience/client), and motivation for composing documents inside and outside of the classroom. The four categories I developed questions were as follows:

1. An individual’s perception toward composition (how and why they compose)
2. An individual’s perception toward the coursework (projects/papers)
3. An individual’s development and perception regarding different modalities
4. An individual’s perception regarding higher level questions about the main concepts presented in the course (multimodality and universal design for learning)

For the full survey, please see Appendix D. One survey was conducted mid-semester (week eight). The second survey was conducted at the end of the semester (week fifteen). Both surveys were taken in the classroom, proctored by my thesis director, Dr. Kia Jane Richmond. Results were kept in sealed envelopes in Dr. Richmond’s locked office. I reviewed the results after the semester concluded.

I opted for an email interview, sent out at the end of the semester (week fifteen) with any responses sent and saved by Dr. Kia Jane Richmond until after the semester concluded and final course grades were submitted. The email interview consisted of four

open-ended questions that asked students to consider modalities and motivation for composing documents. The four questions developed from the four categories used to create the survey questions. For example, to measure an individual's development and perception regarding different modalities, I asked "Do you consider multimodal (many modes – visual, aural, reading/writing, kinesthetic, or a combination) strategies when you draft or complete a project? What strategies do you consider and why?" The purpose of these questions was to receive more insight into a participant's learning strategies and to review connections between the interview responses and survey results. To review the interview, please see Appendix E.

Conclusion

I crafted my study as an adaptation of Shannon Walters' study as related in her article. This study was conducted during one fall semester at Northern Michigan University. I wanted to keep data and responses anonymous, but I also wanted measurable data. One foreseeable positive in using anonymous data is that my results and responses would be fairly candid; students did not need to feel like this study was contingent on their overall performance in the course. This study was framed as something purely helping me, not for any other gain. Because my study is focused on how instructional methods and principles could possibly provide student motivation as a whole, it did not make sense to focus on "following" several students and their work closely; instead, I wanted to look at the results and class as a whole to see if it is representative of a classroom experience.

CHAPTER THREE: METHODS

The first section of this chapter will provide the background of the study, which began with the development of the course. It will describe my purpose, the first-year composition program that the study works from, and my syllabus and assignments in detail.

The second section of this chapter will describe the surveys and interviews conducted, as well as the pedagogical basis for the questions asked.

Course Development

I conducted my study through pedagogical instruction, three surveys, and a written interview using one section of EN 211D: Technical and Report Writing at Northern Michigan University during the Fall 2011 semester.

Setting. Northern Michigan University (NMU), located in the Upper Peninsula of Michigan, is a small four-year, public, coeducational university. NMU offers 180 programs of study from the Associates to Master's level to nearly 10,000 undergraduate and graduate students. It holds the distinction of being one of the few laptop initiative campuses, offering Lenovo ThinkPad laptops and Apple MacBook laptops to students through their tuition. The mission of the university is to: "challenge its students and employees to think independently and critically, develop lifelong learning habits, acquire career skills, embrace diversity and become productive citizens in the regional and global community" (Northern Michigan University, 2011, "Mission"). NMU encourages student innovation and innovative learning in the classroom as part of a liberal arts education.

First-Year Composition Program at Northern Michigan University.

According to the requirements for Liberal Studies Division I, to be completed by all students completing a four-year degree, students must take six to eight credit hours to satisfy the division. All four-year degree candidates must take two courses within the First-Year Composition program as part of their foundation for communication requirement to graduate. Incoming freshmen are placed into EN 111 or EN 090 and/or support course recommendations for EN 101 and EN 102 through a recalculated grade point average. Students are required to pass EN 111 (College Composition I) and an EN211 (College Composition II) sequence with a “C” grade or better in order to graduate, unless they receive equivalent transfer credits and a “C” grade or better. Students who place out of EN 111 must take EN 211 and an upper level composition course to satisfy the Division I requirements.

EN 111 (College Composition I) is an introductory college composition course often taught by graduate teaching assistants in their first year of their graduate program. The cap for EN 111 courses is twenty-five students.

EN 211 can also be taught by graduate teaching assistants as well as instructors. EN 211 is offered in four different concentrations: EN 211A: Writing and Literature; EN 211B: Narrative and Descriptive Writing; EN 211D: Technical and Report Writing; and EN 211E: Critical Thinking and Writing. The cap for EN 211 course is also twenty-five students.

This study reviews the responses of 17 consenting students from EN 211D-01 in the Fall 2011 semester. The Northern Michigan University 2011-2012 Course Bulletin (2011) describes EN 211D:

Continued development of students' abilities to read closely, to discuss critically and to write carefully. Writers expand their stylistic range, awareness of form and ability to deal with complex issues; further, they concentrate on developing a comfortable facility with at least one mode of writing. Longer papers are written with at least one paper using information from other sources. Five thousand words are spread over at least six or seven graded assignments. See EN 211A through E for details on special sections. Readings and writing assignments focus on treating subjects appropriate for students in scientific, technical or business fields. Formal expository writing and the preparation of reports are emphasized.

The evaluation guide for the completion of EN 211D requires students to be proficient in the areas of content (focus, development, support, and documentation), structure (organization and transitions), stance (audience awareness), and conventions (grammar, usage, punctuation, and spelling). Based on these requirements, I developed the following course goals, which were prominent on the syllabus:

- Practical Forms: Discuss and practice particular practical writing forms, including resumes, formal letters and emails, formal reports, and so forth.
- Audience: Develop awareness for the level of detail and specific emphasis called for by a given audience or client.
- Content: Maintain consistent focus and provide good ideas, examples, and evidence
- Structure: Use logical development of central idea or theme, employ successful introductions and conclusions, make effective use of transitions
- Style: Consider not only the content and development of information but also the importance of using graphics and document design to display the information
- Stance: Control level of formality or informality, provide clear perspective

- Convention: Show good control of writing conventions (grammar, usage, mechanics)
- Incorporation and Documentation: Incorporate six or more credible sources using MLA or APA.

In EN 211D, students are expected to develop, compose, evaluate, and synthesize forms of technical communication. The course typically covers technical forms such as (but not limited to): memos, email correspondence, career materials (résumés and cover letters), various letters of correspondence, technical reports (recommendation and lab), distribution documents (brochure and pamphlets), and instructional essays.

Teaching Pedagogy

For the purposes of my study, I wanted to incorporate many of the typical technical communication documents bolstered by pedagogical methods grounded in multimodality and universal design for learning. In order to supplement and emphasize the use of modalities in composition, I modeled my course to encourage and require the use of multiple modalities. I also developed my course with the intention of highlighting universal design for learning choices. The reasoning for these pedagogical choices is twofold: my study required a modality-centered course structure and by modeling multimodality and universal design for learning I provided my students with examples and practical applications.

Pedagogically, I made sure to provide multiple means of representation for all units. For example, my unit on netiquette utilized a PowerPoint and lecture combination, which was followed by the review of a popular netiquette website [<http://www.netmanners.com/>], a comedy website [<http://theoatmeal.com/comics/email>],

and a reading on business emails from the textbook. Students also had access to readings and video clips through the course management system, EduCat (Moodle). The unit concluded with a reading/writing exercise that asked students to review sample “bad emails,” identify issues, meet with a partner, and revise the sample emails for proper email etiquette. I made sure to always have the materials, whether in text, video, or visual accessible through the course management system. One student, “Charlotte” praised this technique in an open journal, stating that she was grateful for both the access and different modes.

I also attempted to model using multimodality and universal design for learning openly in the classroom. I disclosed my own personal results for the VARK survey and explained how I would use them for the various assignments. I made an effort to talk through my own thought process as I demonstrated concepts. For example, I openly discussed how I could break down the modes present in a website, using a conversational tone. This technique was repeated by a student, “Benjamin” for one of his modal rounds (which will be discussed below).

Overall, my goal was to mimic the modes students would encounter in both assignments and the real world in my classroom; I attempted to follow the principles of universal design for learning by providing multiple means of representation, action, expression, and engagement.

For my syllabus, please see Appendix C.

Major Assignments. For the purposes of my study, I wanted to craft assignments that were common for the course (EN 211D: Technical and Report Writing), aligned with the expected outcomes, and naturally expressed multimodality. The syllabus description

and a commentary regarding my pedagogical methods for each major assignment or activity follows:

Assignment #1: Résumé/CV. Before you can write for work, you need the job!

We will learn how to effectively compose and market ourselves through cover letters and résumés/CVs.

The “Career Materials” assignment ultimately fulfilled the expectations for the course as defined by the university. Résumés tend to be the first and most common assignment in EN 211D: Technical and Report Writing. Students were asked to be aware of themselves and their audience, who were potential employers. Multimodality was expressed through pre-writing exercises dependent on the individual; students were encouraged to consider multimodal deliverables for the résumés, with the majority opting for an electronic version.

I asked students to consider how they represented information. I reviewed design concepts such as font size and choice, as well as patterns of sections. Students also considered language choice, such as boilerplate language, as part of how they represented information.

Assignment #2: Descriptions/Instructions/Definitions: Brochures and Pamphlet. You will compose a descriptive brochure or pamphlet that describes an issue in your field. [Requires 2 Sources]

I asked students to compose informative brochures and pamphlets that showed clear descriptions of something related to their career field. I expected to see instructions and definitions imbedded in the descriptions. Students were encouraged to think of the

modes that their audience would expect and/or need to understand the information they wanted to convey. This assignment combined the visual and read/write modes heavily.

This assignment focused on the action and expression involved in communicating under the principles of universal design for learning. Students were encouraged to observe the physical (both in print and electronic) use of their documents; they observed ideas about scaffolding information. For example, “Christina” considered how her audience would read her brochure on using accounting software. Christina practiced usability by asking fellow students to read her brochure and then attempt expressions using the accounting software. This process taught her to scaffold her information to build understanding. In her words, she had to “make the instructions go from the basics to the hard stuff.” Through this exercise, Christina also learned the importance of including definitions and instructions to show expression in her communication.

Assignment #3: Topic Proposal. Before one can undertake a large-scale project, a competent and informative proposal must be drafted and submitted. This assignment will lead directly into your Technical Report. [Requires 3-4 Sources]

Using examples from previous EN 211D: Technical and Report Writing course taught by previous graduate teaching assistants, I asked students to develop a topic proposal that would begin to explore an on-campus or potential career-related issue. Because the topic possessed a personal touch, students needed to consider their needs and the needs of others. For example, several students chose to compose topic proposals that explored the issue of on-campus parking, with scopes both wide to all campus parking and limited to commuter parking only.

I developed this assignment to flow directly into the next assignment, Assignment #4: Technical Report. Students structured topic proposals as researched documents that asked permission for students to compose a technical report (recommendation or feasibility based on the subject matter) on the issue(s) discussed in the proposal. This assignment possessed a heavy amount of audience awareness instruction; I asked students to identify primary, secondary, and tertiary audiences as pre-writing exercises. The assignment took the form of a long memo addressed to a specific audience. This audience was meant to carry over into the next assignment for the technical report.

Assignment #4: Technical Report. The technical report is present in nearly every subject, every job. This assignment will include extensive revision and multiple resources. [Requires 6-8 Sources]

I combined Assignment #3: Topic Proposal and Assignment #4: Technical Report spatially in my syllabus to emphasize their connection. Students were asked to compose a topic proposal that would lead directly into a ten-to-twelve page recommendation report. While the emphasis for the composition was heavily read/write, students were asked to incorporate empirical evidence (such as survey and observations) that relied on kinesthetic modes. I asked students to also consider visual modes for the analysis and presentation of data. Students also considered the principles of representation, action, expression, and engagement in their work.

Two student examples are presented in chapter four. For the samples of student work, please see Appendix F and Appendix G.

Assignment #5: Website Evaluation and Memo. We will discover that not all information is presented the same – or well! You will evaluate a website and compose a memo recommending changes for improvement. This assignment will cover two important fields in technical writing: evaluations and memos. This will be part of the final assignment, the Multigenre Project.

I pulled the basic idea of this assignment directly from Walters’ (2010) article. Walters’ (2010) students reviewed websites from the perspective of different visual or cognitive disabilities. I meant for this assignment to continue the exploration of different audiences as well as a consideration of representation, action, and expression.

Assignment #6: Multigenre Project

This project is designed for those with creative and analytic minds. You will create a multiple genre “campaign” to explore a topic that connects with your Technical Report.

Ideally, Assignment #5 and Assignment #6 were to “bounce” off of each other, emphasized multimodal composition. However, an unforeseeable schedule change prompted the removal of Assignment #5. Assignment #5 was meant to measure usability and to employ ideas of representation, action, and expression. However, these ideas were reflected also in Assignment #6.

Therefore, the final project for the course became the Multigenre Project. Based on Tom Romano’s project of the same name from *Blending Genre, Altering Style: Writing Multigenre Papers* (2000), this project asked students to create a “campaign” through two or more documents that incorporated two or more different modes based on the final recommendation from the technical report. Romano (2000) explains that a multigenre project:

. . . arises from research, experience, and imagination. It is not an uninterrupted, expository monologue nor a seamless narrative nor a collection of poems. A Multigenre paper is composed of many genres and subgenres, each piece is self-contained, making a point of its own, yet connected by theme or topic and sometimes by language, images, and content. In addition to many genres, a Multigenre paper may also contain many voices, not just the author's. The trick is to make such a paper hang together (Introduction, x-xi).

I wanted my students to experience different technical papers and audiences, but on their own terms. My goal was to have students be more expressive and explorative than normally found in a technical writing course. I wished for students to consider composing documents that would benefit them for the practice as well as the experience of writing beyond the report. This assignment was also designed to specifically deal with the performance objectives of style and audience, as students were to compose in different styles for multiple audience members/types.

The overall project developed into a portfolio that consisted of three parts:

1. Front matter

Memo or letter of intent, which explained the thought and writing process for the portfolio. Intended to provide a space to explain their multigenre project document choices.

2. Revision of technical report

Final technical report, revised to final product/deliverable status based on comments from rough draft(s). Students were required to include their rough draft(s) with comments to show obvious revision.

3. Multigenre Project

Students were required to compose at least two documents that incorporated at least two different modes that considered their audience and/or clients.

I heavily encouraged students to attempt creating ePortfolios using what-you-see-is-what-you-get (WYSIWYG) websites, such as www.wix.com or www.weebly.com. Those who created ePortfolios automatically fulfilled the multimodal component of the assignment, as students identified websites as naturally multimodal (containing elements of visual, aural, read/write, and kinesthetic modes). Students were also allowed to create traditional portfolios, as long as they showed professional appearance.

For the full assignment sheet, please see Appendix H.

Discussion/ “Modal Rounds”. Instead of leading discussion based on older, less diverse methods, we will discuss our readings and projects through “modal rounds.” This means you will analyze the reading/project for discussion a different mode than what you may normally use. At the beginning of the course we will determine your mode and discussion date. You will have five different modes to choose from: 1) Written Response; 2) Visual Response; 3) Audio Response; 4) Presentational Response; and 5) ‘Hands On’ Response

I modeled my modal round discussion exercise after Patricia Dunn’s multi-modal rounds from *Talking, Sketching, Moving: Multiple Literacies in the Teaching of Writing*. Dunn (2001) asked her students to respond to readings through different modes (p. 139). The goal for these rounds was to “tap into multiple channels of communication” (p. 50). I asked my students to choose two discussion days where they would prepare or present a “modal round” on the reading/topic for that day. Students were to choose two different

days/topics and two different modes. I encouraged students to choose a dominant mode, or a mode they felt comfortable with, and a mode that was either a weak mode or something they had not composed within for this class. For example, “Charlotte,” who was multimodal with dominant preferences for read/write and aural, chose to complete a modal round on writing definitions using the visual mode. She interpreted the assignment by creating a pictorial visual guide of the textbook’s description of definitions.

Miscellaneous Assignments. I designed the course to have room for numerous smaller assignments that were meant to account for the ability to incorporate all types of technical writing and composition in the course. Many of the assignments were derived from the course textbook, *Technical Communication* by Markel, published by Bedford/St. Martin’s in 2010. Other assignments developed from outside readings, or needs reflected by the student population. This means that some assignments were pre-planned; others developed as the need arose.

Sample miscellaneous assignments included:

- Email Correction and Review
- Peer review of sample résumés, cover letters, instructions, and report abstracts
- Empirical research practice creating surveys, interviews, or trends to observe at the campus coffee shop
- Memos explaining concepts or new findings on established concepts
- Review of works cited/references pages
- Cited paraphrase of website or blog information on a pertinent topic

Conclusion to Course Development

Overall, my teaching strategies, syllabus, assignments, and other materials were developed to emphasize multimodal composition and the principles of universal design in the technical writing classroom. I encouraged alternative writing spaces, as long as students considered what composition strategies were in both their best interest and their audience's best interest. Students learned how to consider different modalities for the task at hand, so as to provide them with a basis for the surveys and interview connected with the study. All participants were told from the first class period that the concepts of multimodality and universal design would be present in my course whether or not they gave permission to participate in the study. My goal was for all students to gain the same instructional concepts.

Empirical Research Development

Surveys. As noted in chapter two, I developed my surveys to measure four categories:

1. An individual's perception toward composition (how and why they compose)
2. An individual's perception toward the coursework (projects/papers)
3. An individual's development and perception regarding different modalities
4. An individual's perception regarding higher level questions about the main concepts presented in the course (multimodality and universal design for learning)

The first survey I asked students to take was the VARK survey by Neil Fleming. All students enrolled in the course were required to provide me a print-off of their results. I planned to use these results to monitor their modal round discussion choices as well as the overall performance in the course. This survey allowed me to offer meaningful

suggestions in conferences and rough draft comments. Because learning preferences are not static, I encouraged students to re-take the test at different points during the semester and to keep me informed regarding any changes. I recorded these changes in my teaching journal(s).

As far as my official survey, I offered two sessions of the same set of survey questions. The first base survey was given mid-semester (week eight) to allow for ample time to provide basic instruction in the concepts of multimodality and universal design for learning. The second version of the same survey was given the final week of class (week fifteen). The purpose for giving two sessions of the same survey was to compare results; I wanted to see if the perceptions given in the first survey would change with more instruction and practice composing.

My survey questions asked for identification with certain modalities, as well as perceptions of course trends such as motivation to write for themselves inside and outside of the class, motivation to write based on others' preferences inside and outside of the class, and motivation to write in general. For example, I asked "I find that considering multimodal strategies has helped me become a better writer since I began this class" and "I find that considering multimodal strategies has helped me write more effectively for others than when I began this class" to test for personal, motivational growth and audience awareness. My goal was to see if I could track motivation perception and growth based on instruction and practice with multimodal and universal design for learning concepts.

I also asked questions about perceptions of those with different visual or auditory abilities. For example, I asked "My opinion/view/stance on those with different visual

abilities has changed since when I began this class” to see if students would consider those with visual differences, such as people requiring large text or color to understand and process information.

I discussed methods for displaying information to aid audiences with visual and auditory differences in class during the lessons on visual and aural modes. While these considerations for disability studies were introduced in the class, they were not main concerns for my study.

For my survey questions, please see Appendix D.

Interview. Due to time constraints and the need for anonymity as requested by my institution’s review board, I chose to develop an email interview. I developed four questions based on the four categories I identified in chapter two:

1. Do you consider multimodal strategies when you draft or complete a project?
What strategies do you consider and why?
2. How has knowing your learning preference changed your writing process?
3. In what ways has considering your client’s/audience’s need changed your writing process? How does this affect your writing?
4. Do you feel more motivated to write because of this class? Why or why not?

I created a Word document that could be typed in, re-saved, and sent to my project director. I also allowed for the option of responses to be placed directly in the body of an email correspondence. All replies were to be sent to my project director, Dr. Kia Jane Richmond, for safekeeping until after the semester was completed and final grades were submitted in order to maintain anonymity and to remove personal preference and influence based on various responses.

I intended for the interview to allow for students to fully express thoughts and perceptions that could not be expanded upon in the traditional survey format.

For my interview document, please see Appendix E.

Conclusion to Empirical Research Development

My study, which relies on anonymous student response, was structured to allow participants to respond knowing that their responses would be anonymous and safe to their person and overall course grade. While I reviewed the VARK survey results for all students, I did not know which students had given permission. My surveys and interview were given anonymously, and those who did not give permission at the beginning of the semester were instructed not to complete them.

I developed my empirical research materials to consider four important facets of my study. Questions related to, but not completely relevant to the study, such as questions about disability, appeared to break up question categories as well as for future research interests. The research surveys and interviews mainly looked at modalities, universal design for learning principles, and student motivation and the perception of course topics.

CHAPTER FOUR: ANTICIPATED AND ACTUAL RESULTS

In this chapter, I focus on my anticipated results and how those were met by the study or were different than expected. Described are the results of the mid-semester and end of semester surveys. Also, I discuss the email interview responses as well.

I also include a variety of student responses in order to highlight their voices along with mine. Many of my own comments and any cited comments from students come from my teaching journal, in which I wrote weekly. The information about the two students highlighted in this chapter are based on individual conferences with the students during the course of the semester and on direct observations of them and their work during the class.

Anticipated Results

Before I began teaching, I wrote down my anticipated results, much of them based on background reading that I had completed during grant-funded research in the summer session before I taught the EN 211D course. The questions I considered were as follows:

- 1.) What modalities students identify as their main learning preference?
- 2.) If students know and understand their learning preferences, then will they use them in their own work and in the consideration of others?
- 3.) Will the application of modalities foster student awareness of the self, others, and writing and/or student motivation to compose in the first-year composition classroom?

These questions illustrate the main concerns of my study. I made informed guesses for these outcomes:

- I believe a majority of students will identify as read/write because it is the mode that is expected of them in a composition course.
- I believe a majority of the students will be functioning multimodal in preference because successful students in college are those who can “adapt” to different learning situations.
- I believe students who understand and are comfortable with their learning preferences will be more likely to compose in those modes.
- I believe students who can use different modalities will be more willing to use modalities in relation to their audience’s preferences.
- I believe students who understand and are comfortable composing because they know they can “activate,” or use, modal learning preferences will feel more comfortable and motivated to compose.
- I believe students will feel motivated to write for others if they understand that writing for the best outcome will create a clearer, more useful final product.

Actual Results

Once the semester ended and I turned in final course grades, I was granted permission to review the results of two surveys from week eight and week fifteen of the course. The results reviewed the responses of seventeen students from my Fall 2011 semester EN 211D: Technical and Report Writing class. I explain the results underneath each question and percentage change. Three visual graphs follow this break down. Figure

1 shows the results from the first survey given week eight. Figure 2 shows the results from the second survey given week fifteen. Figure 3 visualizes the following written results, which shows the change between the two surveys.

Main Survey Results

1. *When I write for this class, I tend to think of my audience (other people) as I am drafting.*

One participant moved from neutral (-5.88%) to agree (+5.88%). This indicates that at least one student reconsidered the role of the audience in their drafting process. The other participants were neutral for this statement. I propose that this is because they may have seen thinking of the audience as simply a requirement, as it was emphasized in my teaching and assignment sheets.

2. *When I write for non-school related reasons, I tend to think of audience (other people) as I am drafting.*

Two participants moved from agree (-11.76%) to disagree (+11.76%). I can suggest that this move may either be due to a general feeling that writing to a friend does not require the consideration one would put toward a class assignment, or it may be due to an automatic decision that does not require consideration.

3. *When I write for this class, I consider the best mode for the project at hand.*

More participants agree (+11.76%) or disagree (+5.88%), fewer Participants are neutral (-17.64%). I find it interesting that the move is from neutral to the other two poles. I posit that this might be due to a change in instruction – either for the positive or for the detriment of multimodality.

4. *When I write for this class, I think of technical writing as personal, with human-centered projects.*

Four participants moved from disagree (-17.14%) to agree (+22.86%). This clearly indicates that instruction and practice working with modalities and universal design for learning helps student writers to see the act of technical writing as human-centered because they are composing for and directly to, an audience they have reflected on.

5. *I feel more motivated to write because of this class.*

Participants moved from disagree (-18.18%) to agree (+12.12%). This indicates that the instruction and concepts presented did increase motivation for composing.

6. *I am more aware of the importance of client's needs because of examining websites and considering their design.*

Four participants moved from neutral (-23.53%) to agree (+23.53%). From this result, I gather that students found multimodal sources, like websites, to be instrumental in understanding the companies or instructions for which they were writing.

7. *I am more motivated to create a client-oriented piece of writing now that I have researched my client's/audience's needs.*

Participants moved from neutral (-18.18%) to agree (12.12%). This movement shows that once a student knows their client/audience they feel more confident and motivated to write.

8. *My opinion/view/stance on those with different visual abilities has changed since when I began this class.*

Three participants moved from disagree (-17.65%) to agree (17.65%). A curious result, my goal was not to measure or change the perception for those with differing abilities.

However, it is an encouraging finding considering this study's inspiration case study conducted by Shannon Walters in which those with different abilities were part of the focus.

9. *My opinion/view/stance on those with different auditory abilities has changed since I began this class.*

Participants moved from disagree (-17.65%) and neutral (11.76%) to agree (29.41%).

Similar to question eight, it is interesting to see this movement. Perhaps it is due to the consideration of different audiences.

10. *I have a visual/spatial learning preference.*

Participants moved from disagree (-5.71%) to neutral (+5.71%) and agree (+5.71%). This suggests that students either discovered they preferred visual mode through composition, or they developed confidence in working in the visual mode through the class.

11. *I have an auditory learning preference.*

Three participants went from disagree (-17.65%) to neutral (+17.65%). This movement seems to suggest that while students did not feel particularly strongly toward an aural mode, perhaps they developed some comfort level working in that mode when the situation called for it.

12. *I have a read/write learning preference.*

Participants moved from disagree (-22.22%) to neutral (+11.11%). I would apply my same thoughts to this movement as was stated in the eleventh question.

13. *I have a kinesthetic learning preference.*

No change between surveys. I believe this is due to the fact that the majority of students tested kinesthetic in their original VARK survey. This particular student group's majors

were majorly skewed toward movement-oriented careers, such as Construction Management and Automotive Technology.

14. *I have a multimodal (a combination) learning preference.*

One participant moved from neutral (-5.88%) to agree (+5.88%). Perhaps this one person discovered something about herself/himself: that she/he has multiple preferences for learning modes.

15. *I use more modality (different approaches) in my writing now than when I began this class.*

Participants moved from neutral (-5.71%) to agree (+11.43%). This result shows that students consider the use of modes when writing after this course, meeting one of my research goals.

16. *Now that I know my learning preference, I consider different modes when writing than when I began this class.*

Participants moved from neutral (-17.65%) to disagree (+5.88%) and agree (+11.76%).

The movement to the agree category seems to replicate the positive use of modes as shown in question fifteen. However, the movement to disagree suggests that one student felt that they no longer considered different modes when writing.

17. *I find that considering multimodal strategies has helped me become a better writer since I began this class.*

Participants moved from disagree (-5.88%) and neutral (-5.88%) to agree (+11.76%). I am glad to see that students have discovered that multimodal strategies as key to writing well. This would support my hoped results.

18. *I find that considering multimodal strategies has helped me write more effectively*

for others than when I began this class.

Participants moved from disagree (-18.18%) and neutral (-12.12%) to agree (+24.24%).

This result indicates that students have made the clear connection between modes and audience.

19. *I know more varied learning strategies now than when I began this class.*

Four participants moved from agree (-23.53%) to neutral (+23.53%). I believe this result occurred because students may have received all of the learning strategies they needed by mid-semester, resulting in little growth toward the end of the course.

20. *Considering the best mode for completing a project motivates me now more than when I began this class.*

Participants moved from disagree (-5.88%) and neutral (-17.65%) to agree (+23.53%).

The large movement to the agree category shows that students who understand and can confidently know how to best compose for projects.

Conclusion to Main Survey Results

Overall, the survey results supported several facets of my anticipated outcomes. A majority of my students identified as multimodal, and the set who selected specific modes learned to consider other modes when composing. When students understand the best mode for completing a project, they feel more motivated to compose. The surveys indicated that when students make the connection between modalities and audience, they become aware of how they compose and how they can/should compose for others.

Explanation of Figures

Figure 1 and Figure 2 show specific survey responses. The vertical bar represents one hundred percent of the responses from seventeen participants. The white portion shows the agree responses. The gray portion visualizes the neutral responses. The black portion shows the disagree responses.

Figure 3 shows the change in percent between the first survey (week eight) and the second survey (week fifteen). The movement from a previous response to a different response, such as movement from neutral to agree is shown above the vertical line. For example, in question #6, the responses moved from neutral (which is shown below the vertical line) to agree (which is shown above the vertical line). Question #13 shows no bars as there was no movement.

Note – The bars are divided into three categories: Agree, Neutral, and Disagree. For the purposes of analysis, I combined the “Strongly Agree” and “Agree” into a general Agree, and I combined “Strongly Disagree” and “Disagree” into a general Disagree. Neutral remained the same.

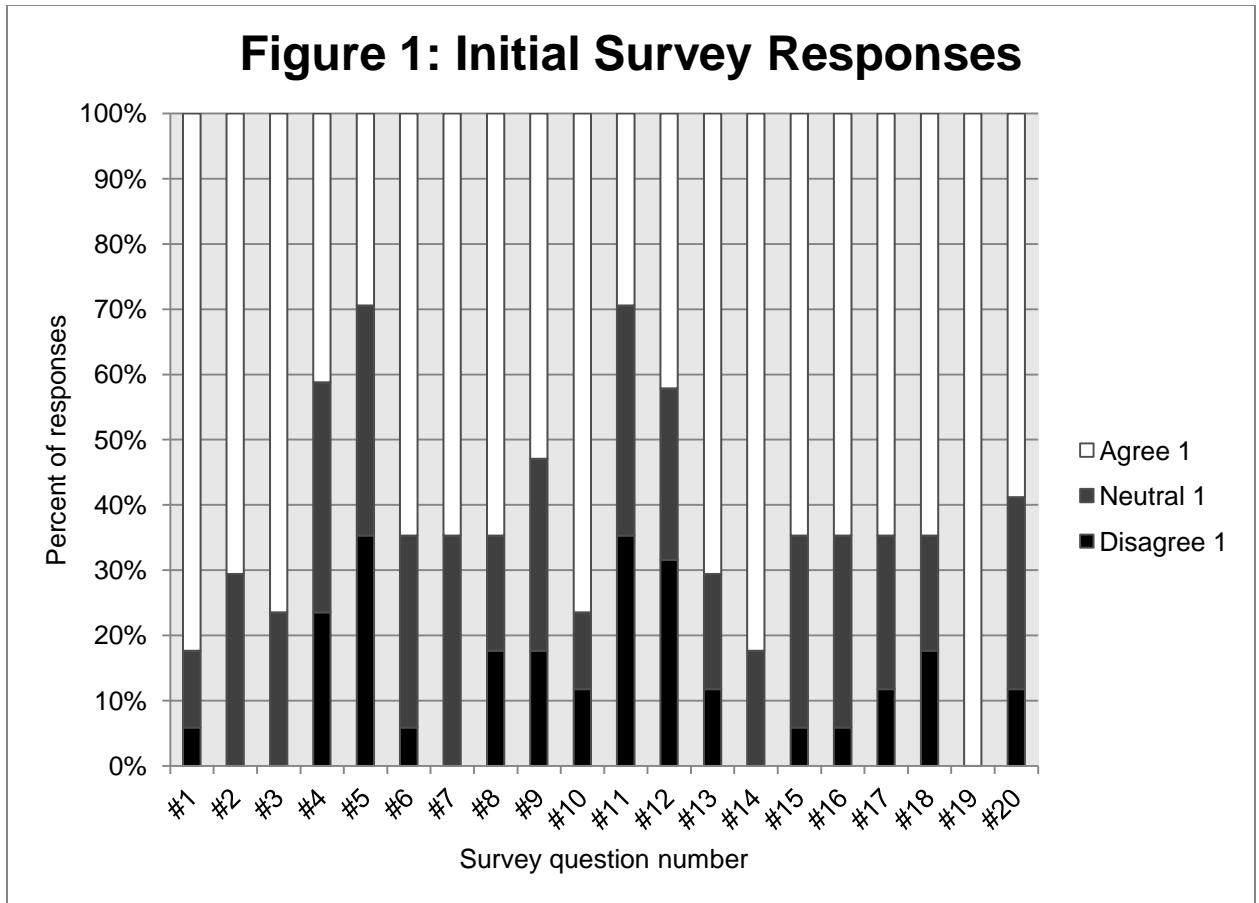


Fig. 1. Initial Survey Responses, Week Eight. This figure shows the percent of each response for each survey question for the initial survey (week eight). The larger the bar, the more participants responded that way. The white portion shows agree/positive responses. The gray portion shows neutral responses. The black bar shows disagree/negative responses.

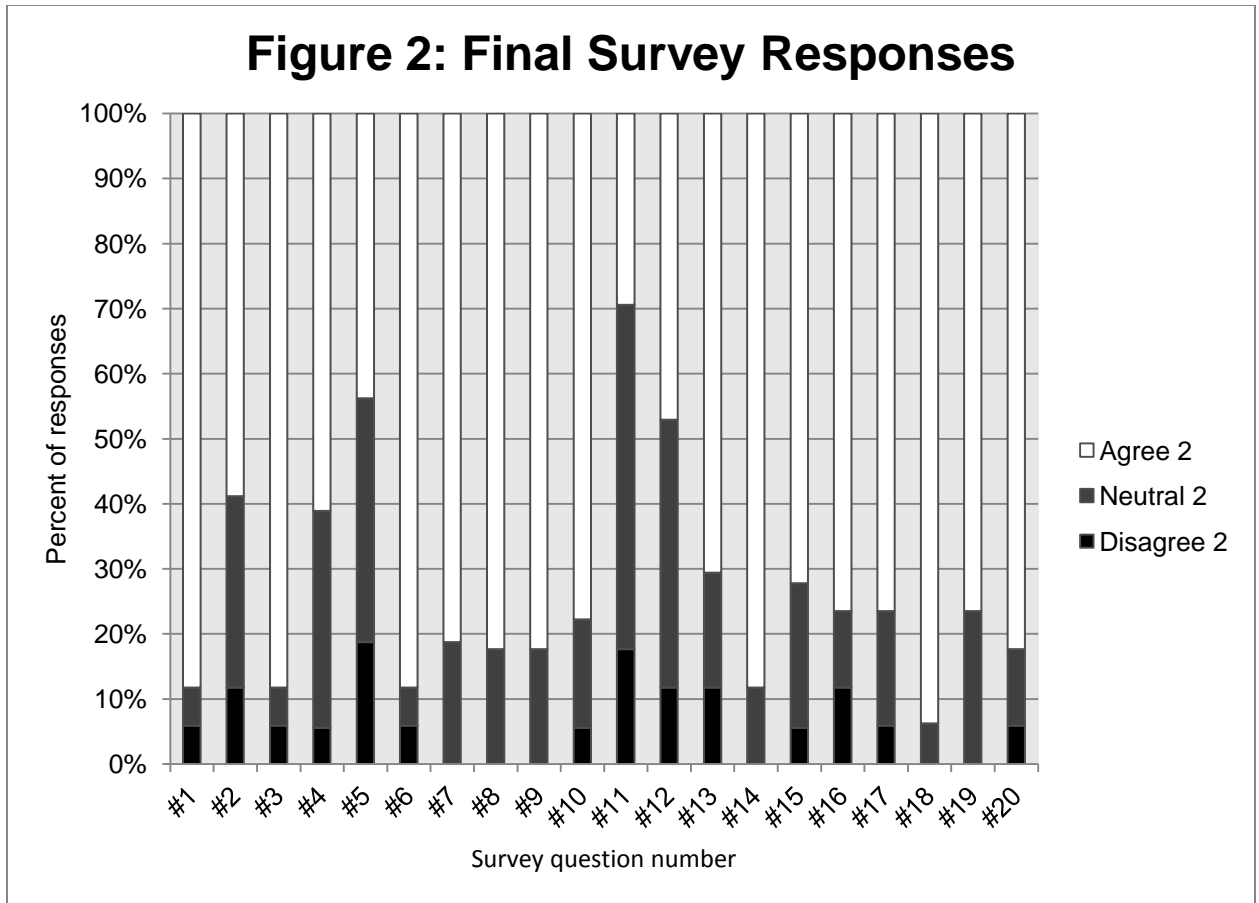


Fig. 2. Final Survey Responses, Week Fifteen. This figure shows the percent of each response for each survey question for the initial survey (week fifteen). The larger the bar, the more participants responded that way. The white portion shows agree/positive responses. The gray portion shows neutral responses. The black bar shows disagree/negative responses.

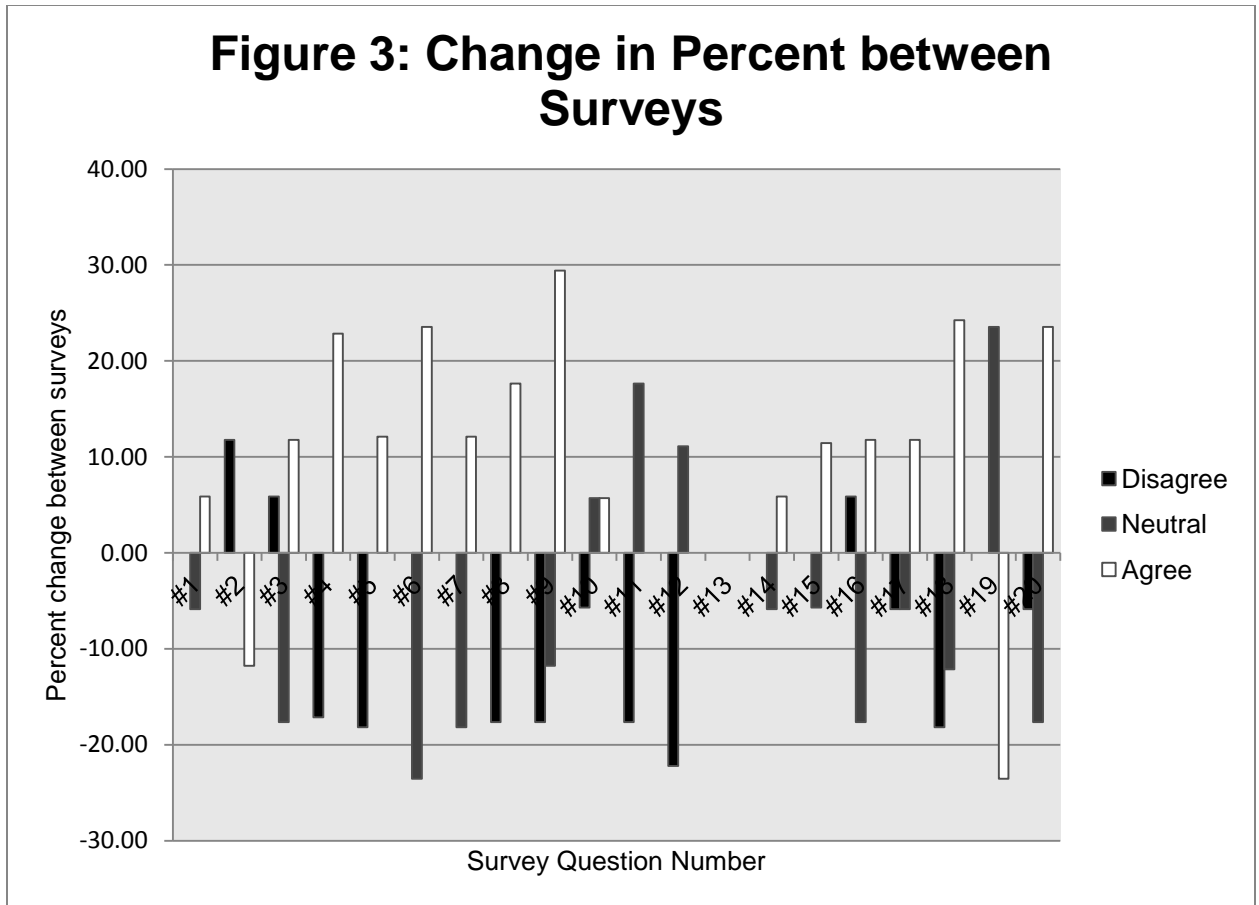


Fig. 3. Change in Percent Between Surveys. This graph shows the change in percent for each response for each question. The higher the bar is above the center line, the more the second survey shifted to that response. The further below the center line, the more the second survey shifted from that response.

Interview

Unfortunately, my thesis advisor did not receive any interview responses from students in the course. This indicates that no one responded to my interview. Because of this, I believe that this method of gathering information was not the best choice for a study of this nature.

Student Comments and Work

Charlotte: Gaining from Modalities. In our conference about what she wants to do for her final portfolio (Assignment #6), we discussed where she started in terms of modalities (read/write). Charlotte identified as read/write, but she was worried about going into the medical field where kinesthetic work was common she had already experienced this by working for laboratory. She also discussed the possibilities of using other modes that could help her future patients. We decided she try completing a visual guide for one of her modal rounds. This modal round is located in Appendix F. Her conclusion from this exercise was that it would “be kind of like showing a patient a picture to help them understand their disease.” She expressed confidence in trying other modes after this positive moment.

When it came time to discuss her multigenre project, Charlotte wanted to explore the idea of composing a mock laboratory report in practice for the real thing. Her technical report final recommendation involved implementing a university-funded drug rehabilitation program open to all students. She really wanted to attempt a kinesthetic mode, but wanted to do it “in writing too.” In a conference, we decided that she adopt the persona of the head doctor who was in charge of the program and had a student come in who was addicted to heroin in high school and wanted to get out of that cycle – so she

went through the lab report by play-acting the scenario with her significant other, allowing her to track in writing his relapse, counseling, and ultimate rehabilitation.

Her final thoughts to me after the completion of the report were that of thanks. She felt confident about going into the next semester with her understanding of writing with the lab report. Her prior experimentation with the visual mode also resurfaced through an advertisement she composed as part of her multigenre project to bolster her lab report's ideas. She told me that it felt "good" to write with modalities in mind and she felt the writing was "more real." Her realizations helped me to see benefits in multimodal as applied to their actual writing and work in technical communication.

Benjamin: Motivation and the Technical Report. For his tech report, he has lived in Marquette all his life, and he wanted to do something important to him, and his experiences in high school English classes, his teachers selected the topics for the students. He loves Presque Isle (a park located in Marquette, Michigan) and was interested in a possible erosion problem. Ben is a German major and not an environmental science major, so his topic came from personal interests and not a connection with a possible career. In his early drafts, he was having a hard time providing an explanation of what erosion was and how it affected Presque Isle. In conferencing with him, he identified a problem in getting the information out, and being understandable in his presentation – he felt it was boring. So he thought about what he could do, and he decided he could talk to someone about it, but he still felt that was not enough (especially because the tech report would be a document). I recommended that he take a camera out with him on a walk of Presque Isle and take pictures to help readers to

see his perspective. This method worked for him. To review his revised technical report methods section, please see Appendix G.

In his report, he had what the problem was, and including scientific terms about erosion, and then he included pictures and explained why he was showing the images he did in order to make the arguments about the problem of erosion. He also made a connection to the audience and thought about a possible audience who was not familiar with what erosion looks like in this area, and through doing that role play, he discovered how valuable it is to imagine what the audience needs, and he said now he understands the value of multiple types of representation in a technical writing piece. He understands the importance of choosing the right representation for the situation and the audience's needs.

Ben struggled with audience awareness at first – his second paper was very general, but students needed to identify a specific audience – his was too wide an audience. Therefore, in doing the project with the images and explanations about erosion on Presque Isle helped him to solidify his understanding of the writer connecting to the audience and aiming the message in a specific way or multiple ways.

Selected Student Responses

These included responses come from my weekly teaching journal and comment on the methods of multimodality and universal design for learning as all students experienced. Comments show motivation or comfort in the task of composition, or the development of confidence as a writer. Some show connections, the idea of application of a learned technique transferable to another course or for personal purposes. The comments I pulled are as follows:

- “I found the modal rounds to be fun and interesting. I could do more than just write a summary.”
- “The Multigenre project allowed for more creativity [sic] and it was something I enjoyed more because of the freedom to create your own document. The blog was probably my favorite part of the Multigenre project.”
- “This class helped me like writing again.”
- “I feel ready to write in my other classes.”
- “This was the first time I was ever taught like this [in reference to using multimodalities and universal design for learning]. I can use these ideas when I get into social work.”

Conclusion

The reviewed results show that participants did gain some metacognitive awareness of themselves and others within the writing/composing process. My anticipated results in terms of modalities that students identified with were generally supported. Students appear to identify as multimodal, which supports the idea that multimodal instruction will provide them with the correct tools to write clearly and efficiently. The minor movements from disagree to neutral or agree with singular modal preference identification shows that students either learn how to use different modes or that they discover new preferences with practice and application.

The most pleasant discovery is that students do feel more motivated to complete projects because they know their learning preferences and various connected strategies. Those who know and can use multimodal strategies are more aware of the writing

process, are more motivated to compose, and are more confident in knowing their client's/audience's needs.

CHAPTER FIVE: RESEARCH AND PEDAGOGICAL IMPLICATIONS

This study suggests that how first-year instructors choose to teach writing directly affects how students learn and write for others. This may not seem like a brand new concept, one must understand that classroom instruction can and should move beyond the parameters put in place by traditional academia. Importantly, the technical writing classroom, as a part of the first-year composition program, can be made into a place of discovery, connection, and motivation.

To incorporate methods of multimodal instruction and the principles of universal design for learning is to provide tangible strategies for our learners, encouraging students to move beyond what is expected of them to what they should expect out of their writing. Students who understand their learning preferences possess the strategies to write more effectively. Alternatively, knowing that everyone is different in their learning preferences allows students a clear way to consider their audience and what their audience needs/expects/wants, which provides a clear direction for composition. With a clear direction and goal, students are more motivated to write. In other words, students who are aware of learning preferences are more motivated to write – both for themselves and for/to others.

Reflection

As a result of this study, I gained insight into my own teaching methods and the learning preferences of my students and potential students. A common misconception with modalities is that students will identify and adhere to one modality, but my study shows that students trend toward multimodal preferences or they possess the ability to

adapt to different modes dependent on the situation. Students do find solace in their preferred mode, as Charlotte did with her read/write preference, but she performed well in the visual and kinesthetic mode when given the space and opportunity. This indicates that pedagogically, I need to bolster my students' current preferences while openly encouraging experimentation in different modalities. My anticipated results identified successful students as those who become functional multimodal in preference and Charlotte represents that type of student.

In regards to my anticipated results, I stated that "I believe students will feel motivated to write for others if they understand that writing for the best outcome will create a clearer, more useful final product." My results found this statement to be true. If students develop audience awareness, such as through the use of universal design for learning principles where considering and composing for the audience remains the center, then students create documents that communicate effectively. Benjamin learned that using visuals helped him communicate effectively, and many other students made similar discoveries.

As I move forward in my teaching career, I know now that I need to be the example and cheerleader for multimodality as a tool for universal design for learning because it motivates students to compose effectively for themselves and others. Personally, I believe good writing and clear communication cannot occur in a vacuum, so I need to prepare my students for multiple writing situations. Whether these situations take place in college biology lab courses or on the construction site during a training session using a manual, I want my students to consider the best mode for the job because it allows them to operate a place of motivation because they know ways to compose

successfully. I need to present my lessons in multiple modes and provide my metacognitive reasoning – to teach to the greatest number of learner preferences I can. Also, my comments and acts as a teacher should foster multimodal learning so my classroom becomes a safe practice space for multimodal composition. This way, students develop processes that they can take into other classrooms or career positions and communicate well.

Limitations

While developing my study, I understood that there would be many limitations.

Limitations I have identified include the following:

- Ideally, this study would have taken place over a period of several semesters, with replications of class size, instruction, and data. This study was limited by its class size of twenty-five, where seventeen elected participation. For a true scientific study, I would need to replicate this until I had participants in the hundreds. This study also only offers a certain demographic of students. This group of participants would have a different status and college major grouping than other semesters, as is not an exact representation of all technical writing first-year composition courses, nor EN 211D: Technical and Report Writing at Northern Michigan University.
- Sadly, I did not receive any interview responses. Perhaps replications would garner responses. Or, perhaps this method was not the best choice for a generally anonymous study.
- This study was anonymous. If I had been allowed to receive direct reasoning behind survey responses, I could judge the results more.

- Several snow days/cancelled classes led to the removal of one assignment (website evaluation). There is no way to tell how this assignment would have influenced the research and results.

Further Research

In a perfect world, I would have the opportunity to fully explore all facets of this study, as well as any connective ideas. Therefore, I have created a list of ideas for future research. This list is not meant to be exhaustive, but rather a compilation of ideas that could benefit from more exploration.

- A researcher could replicate this study on a larger scale, perhaps with several classes taught by several different instructors, using similar methodology to see if the trends remain the same or if trends change.
- It would be interesting to complete a study on how instructors identify with multimodality and then track the use of multimodal instruction in multiple instructors' classrooms.
- A researcher could look more into universal design for learning principles, using those as the focus in the classroom.
- This study could be applied to different composition sequences, such as Northern Michigan University's EN 211B: Narrative and Description Writing to see if combining multimodality and universal design for learning would motivate students in a more creative writing-oriented environment.
- A researcher could attempt to grow this study by including disability studies as its audience focus, similar to Shannon Walters' original study.
- A researcher could focus on technology in the classroom as a multimodal tool.

- It would be interesting to develop a study skills course that uses multimodality and universal design, and then pair it with EN 211D: Technical and Report Writing, or another technical writing course to see how the specific focus on strategies would affect student motivation.
- This study could be replicated with the same topics, adding Academic Service Learning projects as its core to see how that affects audience awareness.

Again, these are only suggestions. I highly advocate that instructors reconsider their teaching styles and look to improve pedagogical strategies.

CONCLUSION

As instructors, we are fortunate to have students who are all different. This differentness allows composition to be multi-faceted and interesting. As noted by Selfe (2009), we too often: “have allowed ourselves to ignore the ‘back story’ implications of this equation, the unspoken belief that those who *do not privilege writing about all forms of expression* – those individuals and groups who have ‘other ways of knowing,’ learning, and expressing themselves – may somehow lack intelligence” (p. 644). In teaching different modalities and emphasizing the need to write for the greatest amount of people (not just a few “special,” advantaged readers), we teach our students to privilege composition as a whole – and that is motivating.

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APPENDIX A

VARK Questionnaire

Choose the answer which best explains your preference and check the box next to it.
Please check more than one if a single answer does not match your perception. Leave blank any question that does not apply.

I like websites that have:

- ☐ interesting written descriptions, lists and explanations.
- ☐ things I can click on, shift or try.
- ☐ interesting design and visual features.
- ☐ audio channels where I can hear music, radio programs or interviews.

You have finished a competition or test and would like some feedback. You would like to have feedback:

- ☐ using a written description of your results.
- ☐ using examples from what you have done.
- ☐ from somebody who talks it through with you.
- ☐ using graphs showing what you had achieved.

You are going to cook something as a special treat for your family. You would:

- ☐ use a cookbook where you know there is a good recipe.
- ☐ cook something you know without the need for instructions.
- ☐ ask friends for suggestions.
- ☐ look through the cookbook for ideas from the pictures.

You are not sure whether a word should be spelled 'dependent' or 'dependant'. You would:

- ☐ see the words in your mind and choose by the way they look.
- ☐ think about how each word sounds and choose one.
- ☐ find it online or in a dictionary.
- ☐ write both words on paper and choose one.

You have to make an important speech at a conference or special occasion. You would:

- ☐ write a few key words and practice saying your speech over and over.
- ☐ gather many examples and stories to make the talk real and practical.

- ☐ write out your speech and learn from reading it over several times.
- ☐ make diagrams or get graphs to help explain things.

You are helping someone who wants to go to your airport, the center of town or railway station. You would:

- ☐ write down the directions.
- ☐ tell her the directions.
- ☐ go with her.
- ☐ draw, or give her a map.

You are using a book, CD or website to learn how to take photos with your new digital camera. You would like to have:

- ☐ many examples of good and poor photos and how to improve them.
- ☐ diagrams showing the camera and what each part does.
- ☐ a chance to ask questions and talk about the camera and its features.
- ☐ clear written instructions with lists and bullet points about what to do.

You want to learn a new program, skill or game on a computer. You would:

- ☐ talk with people who know about the program.
- ☐ follow the diagrams in the book that came with it.
- ☐ read the written instructions that came with the program.
- ☐ use the controls or keyboard.

You are about to purchase a digital camera or mobile phone. Other than price, what would most influence your decision?

- ☐ Trying or testing it
- ☐ Reading the details about its features.
- ☐ It is a modern design and looks good.
- ☐ The salesperson telling me about its features.

You are going to choose food at a restaurant or cafe. You would:

- ☐ look at what others are eating or look at pictures of each dish.
- ☐ choose from the descriptions in the menu.
- ☐ choose something that you have had there before.
- ☐ listen to the waiter or ask friends to recommend choices.

You are planning a vacation for a group. You want some feedback from them about the plan. You would:

- ☐ give them a copy of the printed itinerary.
- ☐ describe some of the highlights.

- ☐ phone, text or email them.
- ☐ use a map or website to show them the places.

You have a problem with your heart. You would prefer that the doctor:

- ☐ used a plastic model to show what was wrong.
- ☐ described what was wrong.
- ☐ gave you something to read to explain what was wrong.
- ☐ showed you a diagram of what was wrong.

Other than price, what would most influence your decision to buy a new non-fiction book?

- ☐ A friend talks about it and recommends it.
- ☐ Quickly reading parts of it.
- ☐ It has real-life stories, experiences and examples.
- ☐ The way it looks is appealing.

A group of tourists wants to learn about the parks or wildlife reserves in your area. You would:

- ☐ take them to a park or wildlife reserve and walk with them.
- ☐ give them a book or pamphlets about the parks or wildlife reserves.
- ☐ show them internet pictures, photographs or picture books.
- ☐ talk about, or arrange a talk for them about parks or wildlife reserves.

Remember a time when you learned how to do something new. Try to avoid choosing a physical skill, eg. riding a bike. You learned best by:

- ☐ written instructions – e.g. a manual or textbook.
- ☐ watching a demonstration.
- ☐ listening to somebody explaining it and asking questions.
- ☐ diagrams and charts - visual clues.

Do you prefer a teacher or a presenter who uses:

- ☐ demonstrations, models or practical sessions.
- ☐ question and answer, talk, group discussion, or guest speakers.
- ☐ diagrams, charts or graphs.
- ☐ handouts, books, or readings.

APPENDIX B

Institutional Review Board Application

**Application for Review of Research
Involving Human Subjects**
NMU Institutional Review Board (IRB)



Submission of this application signifies that you have read the NMU IRB Policy Manual and agree to adhere to the procedures and policies explained therein, and that you have completed the [requisite CITI Human Subjects Research Training Modules](#). You must include your CITI Completion Report as an attachment to this IRB application.

Submission of applications to the IRB review will be conducted electronically according to the following procedure:

1. After completing this application, the principal investigator will forward the application to the Department Head for approval.
2. If the Department Head approves the project, s/he will forward the application electronically to the administrative assistant to the IRB (kmaki@nmu.edu) and the IRB chair (dereande@nmu.edu). Please copy the principal investigator on the e-mail.

-
- I. **Name of Investigator** [Virginia M. Schminke-Yaussy](#)
 Department [English](#)
 Mailing Address [#252 Gries Hall](#)
 Phone [\(906\) 227 - 1758](#)
 Email vschmink@nmu.edu
- II. **Faculty Advisor** (for student research) [Kia Jane Richmond](#)
 Advisor's Phone [\(906\) 228-3358](#)
 Advisor's E-mail krichmon@nmu.edu
- III. **List the CITI Modules you have taken within the past three years:**
 Basic Course Passed on [05/23/11 \(Ref #6052279\)](#)
 Required Module(s): [Students in Research - SBR](#)

IV. **Project Title:** Creating a Pedagogy of Awareness in Technical Writing: Motivation, Multimodality, and Universal Design

V. **Funding:** Pending funding decision Currently funded ☒ Not funded

List source of funding (if applicable): Excellence In Education Grant (Summer 2011)

VI. **Proposed project dates:** from August 1, 2011 to December 31, 2011

Note: Do not begin your research (including potential research subjects) until you receive notification that your application has been approved by the IRB. This process will take approximately 2 weeks (excluding breaks).

VII. **Type of Review** (check one)

Administrative review	Yes ¹	No
Expedited review	Yes ² <input checked="" type="checkbox"/>	No
Full review	Yes	No

¹ If yes, explain why you feel your project should receive an administrative review (please relate your argument to one of the categories listed under Section I Part D in the IRB Manual).

² If yes, explain why your project should be expedited (please relate your argument to one of the categories listed under Section I Part D in the IRB Manual) and complete this application form.

This study focuses on “research” employing “survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies” as described in Part D of the *IRB Manual*.

IIIX. **Project Description (Abstract)**

Please limit your response to 200 words

This project will ask students in my EN211D-01 class (Fall 2011) to reflect on their technical writing skills, learning styles, and writing strategies in regard to different communities/subjects. I will implement multiple learning strategies through multimodal instruction/projects and universal design pedagogy. Students will learn how define multimodality and will investigate different learning modes (visual, aural, reading/writing, and kinesthetic). The goal of this project is to study the pedagogical implications of these strategies to determine any changes in student motivation or awareness of writing for themselves and others within the realm of technical communication. Participants will engage in personal interviews and surveys that ask them to consider the strategies used and their feelings regarding their writing. Projects/papers composed by participants may be used for supplemental textual research. My research will include an examination of scholarly academic resources. This project will become my Master’s thesis, and my goal

is to contribute to scholarly research regarding composition pedagogy and technical communication.

IX. Subjects in Study (check all that apply)

<input checked="" type="checkbox"/> NMU students or staff	Pregnant women, fetuses, or neonates	NMU faculty
Cognitively impaired student	Prisoners	Adult, non-
Minor	Non-native speakers	

Number of subjects 15-25*

Age range of subjects 18 to 90

*Students from my Fall 2011 EN 211D course will be invited to participate through an e-mail message and verbal explanation. They will be asked to complete an Adult Consent form, which will be kept in a sealed envelope in the possession of my project director, Kia Jane Richmond. The numbers listed are my projected hope, not actual. If I receive no participants, I plan to continue research in my Winter 2012 EN 211D course using the same procedures.

X. Procedures

- A.** Describe how the subject pool will be identified and recruited. If the subjects receive payment or compensation for participation, state the amount and form of payment.

I will recruit students from my Fall 2011 EN 211D-01 course. It is common for English students to complete their thesis research within one semester. However, if unforeseeable issues arise, such as lack of participation or usable data, I would be willing to continue research using the same procedures into my Winter 2012 EN 211D course.

Student involvement will be voluntary and participants will fill out an adult consent form. Participants will not receive any form of payment or compensation.

- B.** Discuss where the study will take place and any equipment that will be involved.

Participants will take part in surveys and written interviews in regard to classroom instruction pedagogy and projects. Surveys will be administered Week One and Week Eight of the Fall 2011 semester; written interviews will be administered Week Twelve. These will be administered by my project advisor, who will visit the class in person and administer them before the beginning of the class period. The online VARK survey will be sent through an email message, and all students will be asked to print out their results (or a blank page) and bring them to class to be placed in a confidential envelope, prior to the beginning of the class period. Surveys and interviews will be given to the entire class and will be collected in sealed envelopes, whether completed or not. All sealed envelopes will be kept with my project director, Kia Jane Richmond, until grades are posted at the end of the term. I will not be present in the classroom during the surveys or interview process(es). Results will be recorded separately. I will take notes on my NMU laptop; I do not foresee the use of any other equipment.

- C.** Describe what the participants will be doing in the research project and how long will they be asked to participate. Attach any interview scripts, questionnaires, surveys, or other instruments that the participants will be asked to complete or respond to.

I will include excerpts from participants' writing and course work as well as responses to personal interviews in the final research paper/Master's thesis. Participants will answer survey questions regarding course work, teaching and learning methods, and their writing. Questions regarding gender, race, or major will not be asked as they do not pertain to the study. I will instruct students as to the definition of multimodality and different learning modes (visual, aural, reading/writing, and kinesthetic) so they can work to identify and "play" with the various learning methods. Also, participants will complete Neil Fleming's VARK survey on learning modes.

VARK Survey Questions (<http://www.vark-learn.com/english/index.asp>):

Choose the answer which best explains your preference and check the box next to it.

Please check more than one if a single answer does not match your perception. Leave blank any question that does not apply.

Remember a time when you learned how to do something new. Try to avoid choosing a physical skill, eg. riding a bike. You learned best by:

- ☐ watching a demonstration.
- ☐ listening to somebody explaining it and asking questions.
- ☐ written instructions – e.g. a manual or textbook.
- ☐ diagrams and charts - visual clues.

You are not sure whether a word should be spelled 'dependent' or 'dependant'. You would:

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- ☐ give them a book or pamphlets about the parks or wildlife reserves.

You have finished a competition or test and would like some feedback. You would like to have feedback:

- ☐ using graphs showing what you had achieved.
- ☐ from somebody who talks it through with you.
- ☐ using examples from what you have done.
- ☐ using a written description of your results.

You are planning a holiday for a group. You want some feedback from them about the plan. You would:

- ☐ describe some of the highlights.
- ☐ phone, text or email them.
- ☐ give them a copy of the printed itinerary.
- ☐ use a map or website to show them the places.

I like websites that have:

- ☐ interesting written descriptions, lists and explanations.
- ☐ things I can click on, shift or try.
- ☐ audio channels where I can hear music, radio programs or interviews.
- ☐ interesting design and visual features.

You are helping someone who wants to go to your airport, town centre or railway station. You would:

- ☐ tell her the directions.
- ☐ write down the directions.
- ☐ draw, or give her a map.
- ☐ go with her.

You are about to purchase a digital camera or mobile phone. Other than price, what would most influence your decision?

- ☐ Trying or testing it
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- ☐ The salesperson telling me about its features.
- ☐ It is a modern design and looks good.

Do you prefer a teacher or a presenter who uses:

- ☐ demonstrations, models or practical sessions.
- ☐ question and answer, talk, group discussion, or guest speakers.
- ☐ handouts, books, or readings.
- ☐ diagrams, charts or graphs.

Other than price, what would most influence your decision to buy a new non-fiction book?

- ☐ Quickly reading parts of it.

☐ It has real-life stories, experiences and examples.

☐ The way it looks is appealing.

☐ A friend talks about it and recommends it.

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☐ cook something you know without the need for instructions.

☐ use a cookbook where you know there is a good recipe.

☐ ask friends for suggestions.

☐ look through the cookbook for ideas from the pictures.

You have a problem with your heart. You would prefer that the doctor:

☐ used a plastic model to show what was wrong.

☐ gave you something to read to explain what was wrong.

☐ described what was wrong.

☐ showed you a diagram of what was wrong.

You are using a book, CD or website to learn how to take photos with your new digital camera. You would like to have:

☐ a chance to ask questions and talk about the camera and its features.

☐ clear written instructions with lists and bullet points about what to do.

☐ many examples of good and poor photos and how to improve them.

☐ diagrams showing the camera and what each part does.

You want to learn a new program, skill or game on a computer. You would:

☐ talk with people who know about the program.

☐ read the written instructions that came with the program.

☐ use the controls or keyboard.

☐ follow the diagrams in the book that came with it.

You have to make an important speech at a conference or special occasion. You would:

☐ write out your speech and learn from reading it over several times.

☐ gather many examples and stories to make the talk real and practical.

☐ write a few key words and practice saying your speech over and over.

☐ make diagrams or get graphs to help explain things.

Interview Questions:

5. Do you consider multimodal (many modes – visual, aural, reading/writing, kinesthetic, or a combination) strategies when you draft or complete a project? What strategies do you consider and why?

6. How has knowing your learning preference (consider the VARK survey, course work, and any other observations) changed your writing process?
7. In what ways has considering your client's/audience's need changed your writing process? How does this affect your writing?
8. Do you feel more motivated to write because of this class? Why or why not?

Survey Questions:

Scale:

1 = Strongly Disagree

2 = Disagree

3 = Neither Agree nor Disagree

4 = Agree

5 = Strongly Disagree

1. When I write for this class, I tend to think of my audience (other people) as I am drafting.
2. When I write for nonschool-related reasons, I tend to think of audience (other people) as I am drafting.
3. When I write for this class, I consider the best mode for the project at hand.
4. When I write for this class, I think of technical writing as personal, with human-centered projects.
5. I feel more motivated to write because of this class.
6. Examining websites and considering their design has made me more aware of the importance of client's needs.
7. I am more motivated to create a client-oriented piece of writing now that I have researched my client's/audience's needs.
8. My opinion/view/stance on those with different visual abilities has changed when I began this class.
9. My opinion/view/stance on those with different auditory abilities has changed since when I began this class.
10. I have a visual/spatial learning preference.
11. I have an auditory learning preference.
12. I have a read/write learning preference.
13. I have a kinesthetic learning preference.
14. I have a multimodal (a combination) learning preference.
15. I use more modality (different approaches) in my writing now than when I began this class.
16. Now that I know my learning preference, I consider different modes when writing than when I began this class.
17. I find that considering multimodal strategies has helped me become a better writer since I began this class.

18. I find that considering multimodal strategies has helped me write more effectively for others than when I began this class.
19. I know more varied learning strategies now than when I began this class.
20. Considering the best mode for completing a project motivates me now more than when I began this class.

- D. If there are any costs—laboratory tests, drugs, supplies, etc.—to the subjects for participating, they should be explained.

There are no costs involved.

- E. If deception is involved or information withheld from the subjects, please justify the withholding and describe the debriefing plan.

Deception is not planned.

XI. Risks

Describe the nature and likelihood of possible risks (physical, psychological, social, etc.) to the subjects and precautions that will be taken to minimize them. **Simply stating “none” is unacceptable; most research presents some risk to subjects.**

The anticipated risks associated with this study include: participants revealing information they prefer to be kept confidential; participants learning something about themselves they might prefer not to know; and/or participants learning something about others that they might prefer not to know.

In order to minimize this and any other unforeseen risks, participant should be assured that pseudonyms will be used and that identifying information such as gender, race, or major will be changed whenever possible. I do not plan to ask participants questions regarding their race, gender, or major and these will not factor into the research. Participants answer survey and interview questions regarding course work, teaching and learning methods, and their writing only.

XII. Benefits

Describe the benefits to the subject and/or society. The IRB must have sufficient information to make a determination that the benefits outweigh risks.

Potential benefits to the subject:

- a. Engage in writing strategies that will benefit their individual learning styles;
- b. Gain insight into how and why they write professionally;
- c. Learn strategies and understanding for those different from them;
- d. Gain motivation for writing for themselves and others.

Potential benefits to society:

- a. Developing teaching practices for technical communication;
- b. Adding to current research on technical communication, universal design, and multimodal pedagogies;
- c. Motivating students to become aware of themselves and others in the community and their communication needs.

XIII. Voluntary Participation

Describe how you will ensure subject participation is voluntary. A copy of the consent form to be signed by the subject should be attached to this proposal, (See Section IV in the IRB Manual for information about informed consent forms.) If your research is exempted from obtaining a signed informed consent release, please include a written protocol that indicates how informed consent will be obtained.

Subjects will be invited to participate by personal e-mail and verbal explanation and will be given an informed consent form. They will be informed that their choice not to participate will not affect course grade or my relationship with them in any way. Subjects will be given the choice to withdraw from the study at any time without penalty.

XIV. Confidentiality of Data

Describe how you plan to protect the confidentiality of the data collected. Include a description of where the data will be stored and who will have access to it. If the data will be coded to protect subject identity, this should be explained. NOTE: ALL DATA MUST BE RETAINED FOR 7 YEARS

Data will be stored on my NMU laptop and/or an external drive with a protected password. These will be kept in the locked office of the research. All survey and interview results, whether completed or not, will be kept in sealed envelopes. These sealed envelopes will be kept in a locked office by my thesis director, Kia Jane Richmond. Data will be accessible only by the researcher and her advisor. All data will be retained for seven years.

Upon approval from the IRB, you will be issued a project number. Please list this project number on all materials distributed to your participants. If your project is approved, you will have one year from the date you receive your project number to conduct your research.

Within one year of your project approval, you must submit either an End of Project Report or request a one-year extension by submitting a Project Renewal Form.

At any point, should you wish to make changes to your protocol, you must submit a Project Change Form before initiating the changes.

If any unanticipated problems arise involving human subjects, you must immediately notify the IRB chair (dereande@nmu.edu) and NMU's IRB administrator (tseethof@nmu.edu) and must submit an Unanticipated Problem/Adverse Event form.

CITI Collaborative Institutional Training Initiative

Students Curriculum Completion Report

Printed on 7/15/2011

Learner: Virginia Schminke-Yaussy (username: vschmink)

Institution: Northern Michigan University

Contact Information 1009 Grant Avenue #8
Marquette, Michigan 49855 United States of America
Phone: (906) 227-1758
Email: vschmink@nmu.edu

Student Researchers:

Stage 1. Basic Course Passed on 05/23/11 (Ref # 6052279)

Required Modules	Date Completed	Score
Students in Research - SBR	05/23/11	10/10 (100%)

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

Informed Consent Form For: "Creating a Pedagogy of Awareness in Technical Writing: Motivation, Multimodality, and Universal Design"
Principle Research/Investigator: Virginia Schminke-Yaussy

Purpose of research: to explore different learning strategies through multimodal instruction; to gain insight into how and why one writes professionally; to develop writing strategies that benefit both the writer and their subject/community; to study technical communication, multimodal, and universal design composition strategies.

I, _____, understand that my participation in this study is voluntary and confidential. I understand that I will not be identified by any personal characteristics that might make known my identity, such as sexual orientation, race, ethnicity, etc. The information you provide will be kept confidential; however, federal regulatory agencies and the Northern Michigan University Institutional Review Board (a committee that reviews and approves research studies) may inspect and copy records pertaining to this research.

I understand that information collected in this research project will be used as data in a research project on "Creating a Pedagogy of Awareness in Technical Writing: Motivation, Multimodality, and Universal Design by Virginia Schminke-Yaussy. I give Virginia Schminke-Yaussy permission to use my written comments in any email communication, excerpts from my course projects/papers, survey results and comments, as well as information shared in in-person interviews conducted by Virginia Schminke-Yaussy, or her project advisor, Dr. Kia Jane Richmond, provided that my identity is not made known.

Risks: No medical risks are anticipated. The only anticipated risk associated with this study is that participants might reveal information they prefer to be kept confidential. In order to minimize this and other any other unforeseen risks, participants should be assured that pseudonyms will be used and that identifying information such as gender, race, or major will be changed whenever possible.

Benefits: This study might allow the researcher, participants, and others understand more about their writing skills in terms of execution and audience, as well as increasing the awareness of the self and others through the teaching strategies and assignments conducted in Northern Michigan University's technical communication course, Fall 2011 EN 211D-01.

I further understand that I may withdraw at any time without prejudice or losing any benefits for which I would otherwise qualify by contacting Virginia Schminke-Yaussy at 906-227-1758 or vschmink@nmu.edu, or her project advisor Dr. Kia Jane Richmond at 906-228-3358 or kritchmon@nmu.edu. Further, I can contact Dr. Terrance Seethoff, IRB Administrator, at 906-227-2300 or at tseethoff@nmu.edu if I have questions regarding my participation as a research subject.

I have read the above "Informed Consent Statement." The nature, risks, demands, and benefits of the project have been explained to me. I understand that I may ask questions and that I am free to withdraw from the project at any time without incurring ill will or negative consequences. I also understand that this informed consent document will be kept separate from the data collected in this project to maintain anonymity (confidentiality). Access to this document is restricted to the principle investigators.

Subject's Signature

Date

Thank you very much for your consideration.

Sincerely,
Virginia M. Schminke-Yaussy
English Department
Office: #252 Gries Hall
(906) 227-1758
vschmink@nmu.edu

APPENDIX C

EN 211D: Technical and Report Writing Fall 2011 Syllabus

Syllabus Fall 2011

EN 211D-01: Technical and Report Writing

Course Sequence Number: 80406

Instructor: Virginia M. Schminke-Yaussy
Office: # 242 Gries Hall
Phone: (906) 227-1758 [office]
Email: vschmink@nmu.edu
Time: MTWR 9:00am – 9:50am
Classroom: Gries Hall 166
Office Hours: MTWR 10:00am -11:00am; and by appointment

***NMU Bulletin* Description for EN 211D, Technical and Report Writing,**

Continued development of students' abilities to read closely, to discuss critically and to write carefully. Writers expand their stylistic range, awareness of form and ability to deal with complex issues; further, they concentrate on developing a comfortable facility with at least one mode of writing. Longer papers are written with at least one paper using information from other sources. Five thousand words are spread over at least six or seven graded assignments. See EN 211A through E for details on special sections.

Readings and writing assignments focus on treating subjects appropriate for students in scientific, technical or business fields. Formal expository writing and the preparation of reports are emphasized.

NOTE: You must receive a grade of C or higher in order to complete the EN211 liberal studies requirement.

Performance Objectives for Students in EN 211D:

- **Practical Forms:** Discuss and practice particular practical writing forms, including resumes, formal letters and emails, formal reports, and so forth.
- **Audience:** Develop awareness for the level of detail and specific emphasis called for by a given audience or client.

- **Content:** Maintain consistent focus and provide good ideas, examples, and evidence
- **Structure:** Use logical development of central idea or theme, employ successful introductions and conclusions, make effective use of transitions
- **Style:** Consider not only the content and development of information but also the importance of using graphics and document design to display the information
- **Stance:** Control level of formality or informality, provide clear perspective
- **Convention:** Show good control of writing conventions (grammar, usage, mechanics)
- **Incorporation and Documentation:** Incorporate six or more credible sources using MLA or APA.

Required Texts:

- Markel, Mike. *Technical Communication*. New York: Bedford/St. Martin's, 2010. Print.

Course Policies

ADA Statement

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1700). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

Plagiarism

Academic dishonesty is an important issue and is treated very seriously in the English Department at NMU. The pertinent sections of the NMU Student Handbook Student Code on academic dishonesty are listed below.

2.2.3 Academic Dishonesty (penalty: not less than disciplinary probation; not more than expulsion) *This regulation does not preclude an academic penalty imposed by an instructor as provided for in Student Rights and Responsibilities, Section 1.2.3.*

- .02 *No students shall submit as their own to an instructor any work which contains ideas or materials taken from another without full acknowledgement of the author and the source.*
- .03 *No students shall submit as their own any work or assignment which contains content falsified by the student or content the student knows to be false.*
- .06 *No students shall knowingly participate in, or otherwise facilitate, the academic dishonesty, as described above, of another student.*

Attendance/ Tardiness Policy

You are expected to attend class every day, arrive on time, have your assigned work completed, and participate in classroom activities and discussions. Class participation and in-class work count toward your grade. You will not pass the course if you do not attend.

You will be allowed to miss *four* class sessions without penalty; however, each additional absence will lower your final grade by one step on the grading scale (i.e. from a B to a B-).

If you accumulate more than six absences, you will fail the course.

As a courtesy, please notify me if you are going to be absent. Please communicate with me in the event of a medical or family emergency, as you may be excused based upon the situation and documentation.

Tardiness is disruptive. I will close the door ten minutes after class has started and will not allow walk-ins. *A total of three will result in one absence.* If you are routinely late due to the nature of where your previous class is located or for any other reason, please communicate with me so we can determine accommodations, if needed.

You are also expected to be respectful towards your professor and your classmates. If you do not abide by the above conditions, I will instruct you to leave the classroom and to meet with me in my office before I will permit you to return to class.

Inclement Weather Policy

On occasion, the University may cancel classes due to inclement weather. To find out if classes are being held, check the NMU website, or call 227-BRRR (2777), the weather line for NMU.

Late Work Policy

All work or drafts must be turned in following the assignments specifics, on the date and time noted on the assignment sheet. I will *not* accept late work. Work turned in late will not be considered for revision comments or grading. Even if you have missed a class, you will still be expected to make up any missed in-class work or assignments. Ask your peers for this information – make friends!

I will allow for one “freebie” late work assignment. This constitutes the acceptance of one paper or assignment turned in late up to four days. In this case, papers turned in later than five days will not be accepted. Please consider this gift carefully; think about times when you may have trouble with your workload or family events.

Laptop/Cell Phone Policy

I believe the use of technology is integral to the learning process. However, it can be abused. Feel free to bring you laptop to class, but keep it happy and safe in your backpack or bag. If you would like to use it for in-class writing or a project, ask me for permission. Otherwise, I do not want to see laptops out unless instructed.

A possible exception is if someone has a documented special need on file with Disability Services.

Use of cell phones in class is also banned. Thank you for respecting this policy.

EduCat

In an effort to prepare you for future online course systems or possible employment that heavily utilizes electronic documents, this course will use NMU's online course management system, EduCat. Electronic copies of readings, assignments, model papers, supplemental information, forums, wikis, and other materials will be available on this site. If you need any help navigating EduCat or feel that the site acts like you owe it your firstborn, please contact me so we can set up a technology session.

Grading Scale

A	92-100%	B-	80-81%	D+	68-69%
A-	90-91%	C+	78-79%	D	62-67%
B+	88-89%	C	72-77%	D-	60-61%
B	82-87%	C-	70-71%	F	0-59%

Assignments:

Quizzes (X10) (10 x 10pts.) **100 points**

We will have ten short quizzes after long readings. These quizzes will be based directly on the reading; if you have read the assignment, you should do well.

Discussion/ "Modal Rounds" **100 points**

Instead of leading discussion based on older, less diverse methods, we will discuss our readings and projects through "modal rounds." This means you will analyze the reading/project for discussion a different mode than what you may normally use. At the beginning of the course we will determine your mode and discussion date. You will have five different modes to choose from: 1) Written Response; 2) Visual Response; 3) Audio Response; 4) Presentational Response; and 5) 'Hands On' Response

Miscellaneous Assignments **200 points (Total)**

As we work through units, we will have smaller, less intensive assignments. These assignments always build on skills necessary for the larger, more intensive assignments. Examples include: E-mail messages, exercises, blog entries, analysis of graphics, and assessments. The point values will depend upon the assignment; you will be informed as they are assigned.

Assignment #1: Resume/CV and Cover Letter
--

50 points

Before you can write for work, you need the job! We will learn how to effectively compose and market ourselves through cover letters and resumes/CVs.

Assignment #2: Writing In Your Field – Description**50 points**

You will compose a description of an important concept pertaining to your career field. This will take the form or structure of what is appropriate for the field.

Assignment #3: Topic Proposal**50 points**

Before one can undertake a large-scale project, a competent and informative proposal must be drafted and submitted. This assignment will lead directly into your next assignment (#4 Technical Report).

Assignment #4: Technical Report**200 points**

The technical report is present in nearly every subject, every job. This assignment will include extensive revision and multiple resources (8+).

Assignment #5: Website Evaluation and Memo**100 points**

~~We will discover that not all information is presented the same—or well! You will evaluate a website and compose a memo recommending changes for improvement. This assignment will cover two important fields in technical writing: evaluations and memos. This will be part of the final assignment, the Multigenre Project.~~

Assignment #6: Multigenre Project**150 points**

This project is designed for those with creative and analytic minds. You will create a multiple genre “campaign” to explore a topic that connects with your Technical Report.

Total Points for Course: 1000-900

Tentative Schedule

I expect to change this schedule over the course of the semester and will offer you revised copies as I do so. However, dates for rough drafts and final drafts will not change. An up-to-date schedule can also be found on EduCat.

Conferences:

Conferences are required meetings and will provide one-on-one instruction and help. We will meet in my office (#242 Gries Hall). I will expect you to bring one hard copy of your current project for that conference and a writing implement. Missing a conference will count as a class absence, so please take attendance seriously. If issues or special situations arise, please contact me at least a day in advance.

Final Examination Period:

You are required to come to my office during our final examination time to pick up your graded work.

APPENDIX D

Survey

Survey:

Principle Research/Investigator: Virginia Schminke-Yaussy

Project Advisor/Director: Dr. Kia Jane Richmond

Scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

1. When I write for this class, I tend to think of my audience (other people) as I am drafting.

1 2 3 4 5

2. When I write for nonschool-related reasons, I tend to think of audience (other people) as I am drafting.

1 2 3 4 5

3. When I write for this class, I consider the best mode for the project at hand.

1 2 3 4 5

4. When I write for this class, I think of technical writing as personal, with human-centered projects.

1 2 3 4 5

5. I feel more motivated to write because of this class.

1 2 3 4 5

6. I am more aware of the importance of client's needs because of examining websites and considering their design.

1 2 3 4 5

7. I am more motivated to create a client-oriented piece of writing now that I have researched my client's/audience's needs.

1 2 3 4 5

8. My opinion/view/stance on those with different visual abilities has changed since when I began this class.

1 2 3 4 5

9. My opinion/view/stance on those with different auditory abilities has changed since I began this class.

- | | | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 10. I have a visual/spatial learning preference. | 1 | 2 | 3 | 4 | 5 |
| 11. I have an auditory learning preference. | 1 | 2 | 3 | 4 | 5 |
| 12. I have a read/write learning preference. | 1 | 2 | 3 | 4 | 5 |
| 13. I have a kinesthetic learning preference. | 1 | 2 | 3 | 4 | 5 |
| 14. I have a multimodal (a combination) learning preference. | 1 | 2 | 3 | 4 | 5 |
| 15. I use more modality (different approaches) in my writing now than when I began this class. | 1 | 2 | 3 | 4 | 5 |
| 16. Now that I know my learning preference, I consider different modes when writing than when I began this class. | 1 | 2 | 3 | 4 | 5 |
| 17. I find that considering multimodal strategies has helped me become a better writer since I began this class. | 1 | 2 | 3 | 4 | 5 |
| 18. I find that considering multimodal strategies has helped me write more effectively for others than when I began this class. | 1 | 2 | 3 | 4 | 5 |
| 19. I know more varied learning strategies now than when I began this class. | 1 | 2 | 3 | 4 | 5 |
| 20. Considering the best mode for completing a project motivates me now more than when I began this class. | 1 | 2 | 3 | 4 | 5 |

APPENDIX E

Interview

Written Interview:

Principle Research/Investigator: Virginia Schminke-Yaussy

Project Advisor/Director: Dr. Kia Jane Richmond

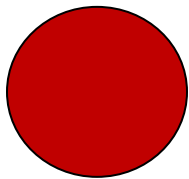
1. Do you consider multimodal (many modes – visual, aural, reading/writing, kinesthetic, or a combination) strategies when you draft or complete a project? What strategies do you consider and why?
2. How has knowing your learning preference (consider the VARK survey, course work, and any other observations) changed your writing process?
3. In what ways has considering your client's/audience's need changed your writing process? How does this affect your writing?
4. Do you feel more motivated to write because of this class? Why or why not?

APPENDIX F

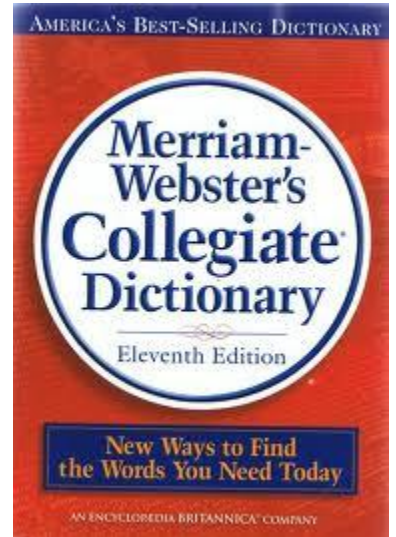
Charlotte's Visual Modal Round

DEFINITIONS

INCLUDE A GRAPHIC IF NECESSARY



**Circle definitions
repeat key words
over and over
confusing reader**



DESCRIPTIONS



OBJECTS visual representations



MECHANISMS parts that work together



PROCESSES How to do something

APPENDIX G

Benjamin's Revised Technical Report, Methods Section

Methods

In order to gain enough knowledge on the subject and the possible solutions to the problem, I read pertinent information relating to Presque Isle and erosion, including print and electronic sources. Since Presque Isle is in the vicinity of where I live, I walked around the park and made observations of the condition of the rocks and cliffs and the current safety measures.

Review of the Literature-

The two print sources I found that offered the most information on erosion and the prevention of erosion were, "Help Yourself" (1978) and "Understanding, living with, and controlling shoreline erosion" (1997). The first one has already been mentioned but the second one presents more information on rocks susceptible to erosion. The types of rocks that form the cliffs surrounding Presque Isle are important and as stated in Fuller Douglas (1997) "The rock types composing cliffs may have originated from sediments deposited on the beds of ancient seas (i.e., sedimentary rocks such as limestone or sandstone), or rocks forged in the intense heat of the earth (i.e., metamorphic or igneous rocks like quartzite or granite). Although all rock cliffs are relatively resistant to rapid erosion, sedimentary rocks are most erodible." This is important information since a large amount of the rocks that make up Presque Isle are sedimentary rocks.

Most of the rocks that can be seen around Presque Isle are sandstone as stated by John Anderton (2009) "Jacobsville Sandstone (Late Precambrian/Cambrian) is found on the southern third of the park and is approximately 570 million years old." This means that cliffs surrounding Presque Isle are more dangerous than they could be. The cliffs are more susceptible to erosion because they are sedimentary rocks which could collapse and cause injury or death to the public if they are not warned of the dangers.

Observations-

Presque Isle is a wonderful place to walk around or to jump off the black rocks on hot summer days. These simple pleasures come with a risk that many people around Marquette may be unaware of. Erosion occurs faster than one may think and a path way that is well used one day may be unsafe the next day. As I walked around Presque Isle I observed several old and worn out safety signs. Some sections of land closer to the water's edge appear to be safe if they are approached from the road/path (see Image 1/Appendix) but from the water's edge it looks in danger of collapse (see Image 2/Appendix). I also noticed several trails moving away from the road that were not "official" trails, but trails that were created and worn out by constant use of the public. These trails only have two warning signs, one at the beginning of the trail that was created by the public which you might not see if you begin at the other end and one in the middle of the trail which simply reads "Keep out" (see Appendix). The man made trails

that were never intended for public use are where warning signs must be placed to ensure that even if people visiting Presque Isle decide to take a trail that was not intended for public use, they will be warned of the dangers of erosion and the high bluffs that may have unstable footing near their edge.

Image 1: Picture from the Path



Image 2: Picture from water's edge



APPENDIX H

Final Portfolio Assignment Sheet

EN 211D-01: Technical and Report Writing

Final Project/Portfolio Description

What is the Multigenre Project?

A Multigenre Project is a collection of documents (a project) that comments on a common theme using different voices and modes.

Your Multigenre Project must have at least *two* documents that comment on, express, interpret, or campaign (enact) your recommended solution from your Technical Report. For example, if your Technical Report examined issues with on-campus parking, you could create:

- An informational pamphlet for students explaining the changes and timeline of the new parking structure you proposed (pretending that it would actually be built)
- An information video for new students explaining the new parking policy
- A status report for the building project
- A pretend blog from the construction company about the building project

You are only limited by your imagination in terms of these documents. You can create: wikis, blogs, other websites, directive reports/memos, meeting minutes, pamphlets, brochures, flyers, advertisements, podcasts, videos, progress/status reports, presentations . . .

You do need to create *at least two* documents. Your Multigenre Project must have *a total of 1500 words*. This means you could craft an advertisement, a blog with several posts, and a flyer if they add up 1500 words, or a memo and a directive report if they add up to 1500 words.

You may revise your website evaluation memo as part of this project. However, you will need to create at least one new document.

You must also *express two modes* in this project (read/write/visual/aural/kinesthetic). Recall the Universal Design lesson and the principles we discussed. Hint: Websites naturally are read/write/visual and kinesthetic.

Your Final Project

Due: 13 December 2011

Contents:

- Table of Contents
- Revised Technical Report
- Multigenre Report
 - At least two documents
 - At least 1500 words (total)
 - Expresses at least two modes

Deliverable Options:

- A Physical Portfolio: A binder or professional folder with clean copies
- An Electronic Portfolio:
 - All documents saved on a CD
 - A website with links/pages (you may link to .PDF or .docx files directly)